United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

In cooperation with Illinois
Agricultural Experiment
Station

Soil Survey of Kendall County, Illinois

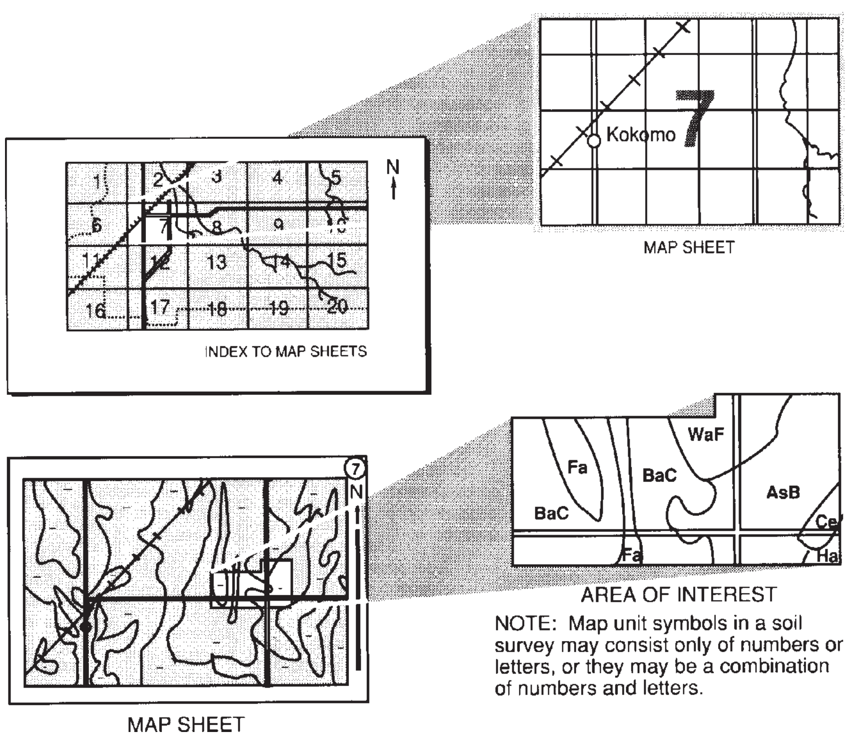
How To Use This Soil Survey

This publication consists of a manuscript and a set of soil maps. The information provided can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the Kendall County Soil and Water Conservation District. Financial assistance was provided by the Kendall County Board and the Illinois Department of Agriculture.

Major fieldwork for this soil survey was completed in 2007. Soil names and descriptions were approved in 2007. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2007. The most current official data are available on the Internet (http://soils.usda.gov).

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

Nondiscrimination Statement

Cover Photo Caption

A new subdivision encroaching on prime farmland in an area of Graymont and Varna soils in Kendall County, Illinois. Urbanization is quickly changing the landscape in one of the fastest growing counties in the United States.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

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Foreword

Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, foresters, and agronomists can use the surveys to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the surveys to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the surveys to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each map unit is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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Soil Survey of
Kendall County, Illinois

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United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Illinois Agricultural Experiment Station

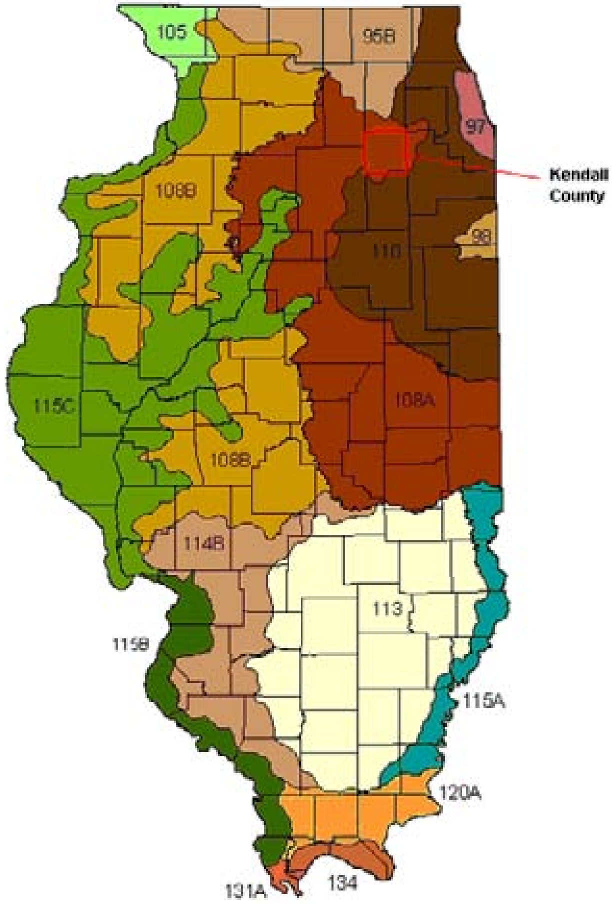
Kendall County is in northeastern Illinois (fig. 1). It has an area of 206,215 acres, or about 322 square miles. It is bordered by Kane County to the north, Du Page County to the northeast, Will County to the east, Grundy County to the south, and La Salle County to the west. In 2000, the population of the county was 54,544 (U.S. Department of Commerce, 2000). Yorkville is the county seat. It is along the shore of the Fox River.

The survey area is a subset of Major Land Resource Areas (MLRAs) 108A, Illinois and Iowa Deep Loess and Drift, and 110, Northern Illinois and Indiana Heavy Till Plain (USDA/NRCS, 2006).

This soil survey updates the soil survey of Kendall County published in 1978 (Paschke, 1978). The updated soil survey provides additional information and has orthophotographic maps at a slightly larger scale, in both electronic and digital format. Some of the information from the 1978 survey has been incorporated in this publication with little or no alteration.

General Nature of the Survey Area

This section provides general information about the survey area. It describes history; physiography, relief, and drainage; natural resources; agriculture; urbanization; transportation facilities; economy; and climate.



LEGEND

95B—Southern Wisconsin and Northern Illinois Drift Plain
97—Southwestern Michigan Fruit and Truck Crop Belt
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Figure 1.—Location of Kendall County and the major land resource areas (MLRAs) in Illinois.

History

Keith Eichorst, community planner, Natural Resources Conservation Service, prepared this section.

Kendall County's history reflects that of northern Illinois. The earliest humans to enter the area arrived approximately 10,000 B.C. From 10,000 B.C. until 6,000 B.C., a cold climate prevailed and the area was sparsely inhabited by hunter-gatherer groups engaging in a nomadic existence. From 6,000 B.C. to A.D. 1673, the weather

transitioned into the relatively warmer and drier conditions of the current climate. The people then inhabiting the area adapted to the climate over time and began to use domesticated plants and develop succeeding Native American cultures, with an increasing reliance on cultivated plants, semipermanent villages, and long-distance trading networks. Little evidence remains on the landscape of their presence (Illinois Department of Natural Resources, 1997).

Beginning in A.D. 1673, European and American traders, mostly French traders called voyageurs, began to explore, trade, and intermarry with Native Americans in the area. These traders were mostly transient and used the river systems as routes of commerce. The number of European or European-Americans arriving in the survey area, however, increased significantly during “The Year of the Early Spring” in 1833. Hundreds of immigrants, most originating from Ohio, permanently settled in what would soon be called Kendall County. The village of Oswego was the first village in the county. It was laid out in 1835, followed by Newark (also 1835), Yorkville (1836), Little Rock (1836), Lisbon (1838), and Millington (1838). Kendall County itself was formed in 1841 out of neighboring La Salle and Kane Counties and was named in honor of Amos Kendall, an adviser to President Andrew Jackson (Kendall County Web site, 2006).

During the 1830s, Kendall County was surveyed according to the Township and Range system and agriculture quickly became the primary industry. By 1845, according to a contemporary account, 600,000 bushels of corn, 500,000 bushels of wheat, and 400,000 bushels of oats, besides pork and wool, were being produced in the county. The Kendall County census of 1850 indicated a population of 7,730. By 1860, the population had increased to 13,074. It remained stable (between 10,000 and 15,000 residents) until 1960. The agriculture-based economy and the 19th century land use pattern are still evident in the county.

Physiography, Relief, and Drainage

Robert T. Kay, hydrologist, United States Geological Survey, prepared this section.

The northern two-thirds of Kendall County is part of the Bloomington Ridged Plain subsection of the Till Plains Section of the Central Lowland Physiographic Province (Leighton and others, 1948). The southern one-third of the county is part of the Kankakee Till Plain Subsection of the Till Plains Section of the Central Lowland Physiographic Province.

The Till Plains are characterized by an undulating surface of low relief composed of ground moraine. The Bloomington Ridged Plain is characterized by low, broad morainic ridges with intervening wide stretches of flat or gently undulating ground moraine. Moraines from the St. Charles and Elburn complexes compose part of the ridged plain in the northwestern part of the county. Part of the Marseilles Morainic System defines the southern boundary of the Bloomington Ridged Plain in southeastern and central Kendall County, and part of the Minooka Moraine defines the eastern boundary of the Bloomington Ridged Plain in eastern Kendall County (Willman and Frye, 1970). The Kankakee Till Plain is characterized by a flat to gently undulating surface with low morainic islands, glacial terraces, torrent bars, and sand dunes. In Kendall County, much of the area that makes up the Kankakee Till Plain was the location of Glacial Lake Wauponsee.

Land-surface altitude exceeds 700 feet above the National Geodetic Vertical Datum of 1929 (NGVD29) in the northwest corner of the county and is between 600 and 700 feet in most of the area north of the Fox River. Land-surface altitude is between 550 and 600 feet near the Fox River in most of the county (fig. 2). Land-surface altitude also is between 550 and 600 feet in most of the southeastern part of the county in much of the area where Glacial Lake Wauponsee occurred. A topographic ridge occurs about 6 miles south of the Fox River. The altitude of the

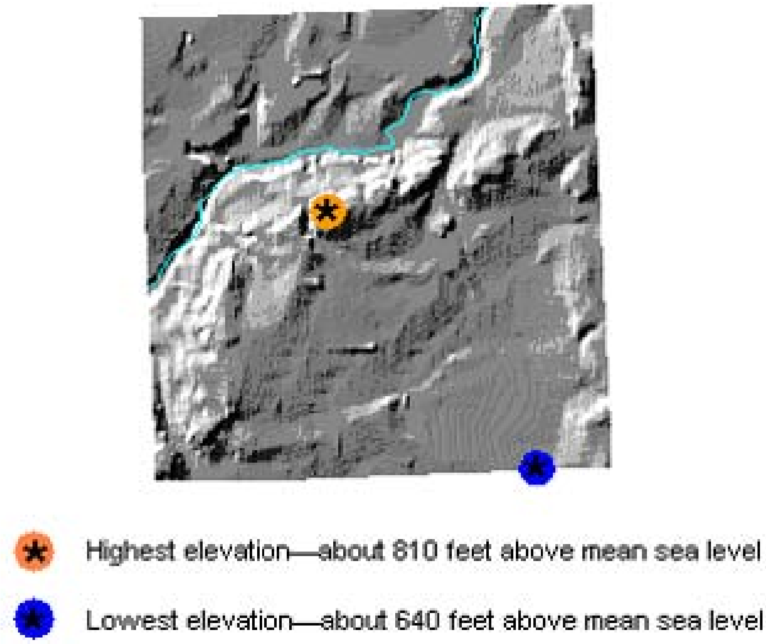

Figure 2.—A generalized relief map showing the location of the highest and lowest elevations in Kendall County. (Source: Illinois State Geological Survey, http://www.isgs.uiuc.edu/education/hi-low/hilow-intro.shtml)

land surface along this ridge ranges from 650 to 750 feet. This ridge roughly parallels the Fox River and defines the location of the Marseilles Morainic System in the county. South of the ridge, surface-water drainage is primarily to Aux Sable Creek, which flows to the Illinois River. North of the ridge, drainage is to the Fox River, which also flows to the Illinois River.

Natural Resources

Robert T. Kay, hydrologist, United States Geological Survey, helped prepare this section.

Kendall County has significant sources of natural resources. They range from construction materials to deposits of surface water or ground water.

Sand and gravel deposits occur in many parts of the county, but they are especially numerous in the outwash and terrace areas along major streams and even some minor streams. Sand and gravel deposits have been quarried near the Fox River north of Yorkville, south of Oswego, and in the western part of the county near Newark.

Dolostone and limestone are quarried at several places in Lisbon Township off of Illinois Route 47. Much of this material is crushed for use as aggregate material in concrete, agricultural limestone, or road surfaces.

Surface water supplies are relatively abundant in Kendall County. The Fox River and Aux Sable Creek are continuously flowing and important surface water resources in the county (fig. 3). They are used for industry and recreation.

Potable water in Kendall County currently is obtained exclusively from ground water. Ground water is tapped by private and public wells from shallow aquifers less than about 600 feet below the surface and a deep aquifer at a depth of about 600 to 1,300 feet below the surface. Shallow aquifers include sand and gravel layers

deposited by Wisconsinan glaciers and aquifers located in about the upper 500 feet of the bedrock. These aquifers are recharged primarily from local precipitation. Deep aquifers are composed of the Ancell and Ironton-Galesville sandstones and other units of the Cambrian-Ordovician aquifer system. Recharge to the Cambrian-Ordovician aquifers in Kendall County comes from western Kendall County and from De Kalb and La Salle Counties.

Agriculture

Keith Eichorst, community planner, Natural Resources Conservation Service, prepared this section.

Like much of Illinois, Kendall County has some very fertile farmland. Agriculture continues to be a major economic activity and is the largest land use in the county. Total agricultural output, according to the 2002 census of agriculture, was $58.1 million dollars; 412 individuals were engaged in farming as a primary or secondary occupation. Total acreage of farmland in the county was 168,082 acres, and 161,129 acres of that farmland was devoted to cropland. Corn was the largest crop (9.25 million bushels produced on 80,030 acres) and soybeans the second largest (2.67 million bushels produced on 70,558 acres). The remaining 10,541 acres of cropland was devoted to wheat, oats, and vegetables. Livestock production was a smaller agricultural enterprise. A total of 29,905 hogs and pigs and 3,439 cattle and calves were produced in the county. Smaller numbers of poultry and sheep also were produced (USDA, National Agricultural Statistics Service, 2006).

Figure 3.—The Fox River, which drains the northern half of the county, is an important source of surface water and provides recreational opportunities.

Urbanization

Keith Eichorst, community planner, Natural Resources Conservation Service, prepared this section.

Since 1960 and accelerating through 2006, Kendall County has experienced expansive urban growth not associated with the agricultural economy. This expansion is associated with the increase of the Chicago metropolitan area into Kendall County and is characterized by large-lot (more than 1 acre) single-family residential housing, large-scale residential subdivision housing projects, and associated service industries. In the U.S. census of 2000, Kendall County had a population of 54,544. In 2000, population projections indicated an increase in population to 78,694 by the year 2020 and to 85,060 by 2030. Current population estimates have greatly exceeded all prior projections; the 2006 population estimate is 88,158, making Kendall County the second fastest growing county in the United States between the years 2000 and 2006 (U.S. Department of Commerce, 2000).

Transportation Facilities

Kendall County has a well developed system of roads. The county is served by Illinois State Highways 25, 31, 47, 71, and 126; U.S. Highways 30, 34, and 52; and Interstate Highway 80. Kendall County also has a well integrated county highway road system consisting of hard-surfaced or graveled roads that connect incorporated and unincorporated areas.

Travel time from Kendall County to Midway and O’Hare airports in Chicago is about 1½ hours. A few private airports serve local recreational and business flying needs; however, they do not support commercial flights or large jets. Two rail lines serve the northern part of the county.

Economy

Keith Eichorst, community planner, Natural Resources Conservation Service, prepared this section.

Kendall County is an affluent area. In 2005, the median family income was $78,500, one of the highest in the State of Illinois and higher than that in the adjoining Chicago metropolitan statistical area ($69,700), Grundy County ($69,250), and La Salle County ($56,200). The poverty level in Kendall County is the lowest of all Illinois counties (3 percent) and well below the 1999 State average of 10.7 percent. Affluence can be attributed to nearby employment centers in the Chicago metropolitan area and in Kendall County (U.S. Department of Housing and Urban Development, 2007). Principal employers in Kendall County include companies engaged in grocery, retailing, communications, heavy equipment, and molded products.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Aurora College in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 24.3 degrees F and the average daily minimum temperature is 15.4 degrees. The lowest temperature during the period of record, which occurred at Aurora College on January 20, 1985, was -26 degrees. In summer, the average temperature is 71.4 degrees and the average daily maximum temperature is 82.8 degrees. The highest recorded temperature, which occurred at Aurora College on July 14, 1936, was 111 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is 38.31 inches. Of this total, 20.36 inches, or about 53 percent, usually falls in May through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 16.91 inches at Aurora College on July 18, 1996. Thunderstorms occur on about 38 days each year, and most occur between April and September.

The average seasonal snowfall is 30.8 inches. The greatest snow depth at any one time was 31 inches recorded on December 25, 1951. On an average, 49 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 15 inches recorded on February 18, 1908.

The average relative humidity in midafternoon is about 59 percent. Humidity is higher at night, and the average at dawn is about 82 percent. The sun shines 67 percent of the time possible in summer and 47 percent in winter. The prevailing wind is from the west in most months but is from the south from June to October. Average windspeed is highest, around 12 miles per hour, from January to April.

How This Survey Was Made

Soil surveys are updated as part of maintenance projects that are conducted for a major land resource area (MLRA) or other region. MLRAs are geographically associated land resource units that share a common land use, elevation, topography, climate, water, soils, and vegetation (USDA/NRCS, 2006). Maintaining and coordinating soil survey information within a broad area result in uniformly delineated and joined soil maps and in coordinated interpretations and map unit descriptions for areas that have similar physiography, climate, and land use.

Updated soil survey information is coordinated within the major land resource area or other region and meets the standards established and defined in the memorandum of understanding. Soil surveys that are consistent and uniform within a broad area enable the coordination of soil management recommendations and a uniform program application of soil information.

This soil survey was made to provide updated information about the soils and miscellaneous areas in Kendall County, which is a subset of MLRAs 108A and 110 (fig. 1). Map unit design and the detailed soil descriptions are based on the occurrence of each soil throughout an MLRA.

The information in this survey includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses.

Soil scientists from both the prior soil survey and the update survey observed the steepness, length, and shape of the slopes; the degree of erosion; the general pattern of drainage; and the kinds of crops and native plants. They made borings and dug holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed.

Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landform merge into one another as their characteristics gradually change. To construct an accurate map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries. After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit.

Fieldwork in the Kendall County soil survey update consisted primarily of soil transects conducted by soil scientists. Soil transects are a systematic method of sampling a specific soil type. Soil borings are taken at regular intervals. Soil scientists then record the characteristics of the soil profiles that they study. They note soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. This information can be used to run statistical analyses for specific soil properties. The results of these analyses, along with other observations, enable the soil scientists to assign the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

The soil maps from the survey published in 1978 were digitized, and this digital product provided the source material for the updated soil survey. Starting in 2002, the soil vector lines were adjusted on the computer by soil scientists. U.S. Geological Survey digital aerial black and white orthophotographs taken in 1998 and 1999 were used as base maps. Soil scientists studied the orthophotographs and U.S. Geological Survey topographic maps to relate land and image features. Adjustments of soil boundary lines on the digital soil maps were made to coincide with the tonal patterns

on the orthophotographs and topographic map contour lines. The orthophotographs also show trees, buildings, fields, roads, lakes, and rivers, all of which help in locating soil boundaries accurately. After adjustments to the new maps were made, the maps were checked for quality and accuracy. These new maps are included in this publication.

The descriptions, names, and delineations of the soils in this survey area may not fully agree with those of the soils in adjacent survey areas. Differences are the result of an improved knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the system of soil classification.

Factors of Soil Formation

Soil forms through processes that act on deposited geologic material. The factors of soil formation are the physical and mineralogical composition of the parent material; the climate in which the soil formed; the plant and animal life on and in the soil; the relief; and the length of time the processes of soil formation have acted on the parent material (Jenny, 1941). These factors are all interrelated and work in conjunction with each other to produce soil.

Climate and plant and animal life are the predominant active factors of soil formation. They act directly on the parent material, either in place or after being moved from place to place by water, wind, glaciers, or human activity, and slowly change it into a natural body that has genetically related horizons. Relief modifies soil formation and can inhibit soil formation on the steeper, eroded slopes and in wet, depressional or nearly level areas by controlling the moisture status of soils. Finally, time is needed for changing the parent material into a soil that has differentiated horizons.

Parent Material

Parent material is the unconsolidated material in which a soil forms. The soils of Kendall County were mainly derived from parent materials that were directly or indirectly impacted by the Pleistocene, or Ice Age. The Wisconsinan Stage Glaciation (or “Episode”) was responsible for most of the soils in Kendall County (fig. 4). Parent materials in Kendall County include till; outwash; loess, or silty material; lacustrine material; organic deposits; alluvium; and bedrock.

Till, or diamicton, is unsorted, ice-deposited sediment composed of a matrix of sand, silt, and clay in which pebbles, cobbles, and boulders are embedded. The Yorkville Member and an undivided member of the Lemont Formation of the Wedron Group make up a large proportion of the glacial deposits covering Kendall County. The Yorkville Member makes up the majority of the till in the county, and the undivided member, which is a mix of several types of till members, is in the northwest corner of the county. The Yorkville Member is calcareous, gray silty clay to silty clay loam till that oxidizes to olive brown. The undivided member is loam to silty clay loam till that oxidizes to olive brown or yellow brown (Hansel and Johnson, 1996). The tills in Kendall County can also be distinguished from each other according to their proportions of gravel, sand, silt, and clay. Differences in these proportions are reflected in the texture and permeability of the tills, which, in turn, have influenced and continue to influence soil development. Catlin and Danabrook soils formed in a loam till that is moderately slowly permeable to air and water. Varna and Graymont soils formed in a silty clay loam till that is slowly permeable to air and water. Plant roots do not readily penetrate more than a few inches into these unleached tills.

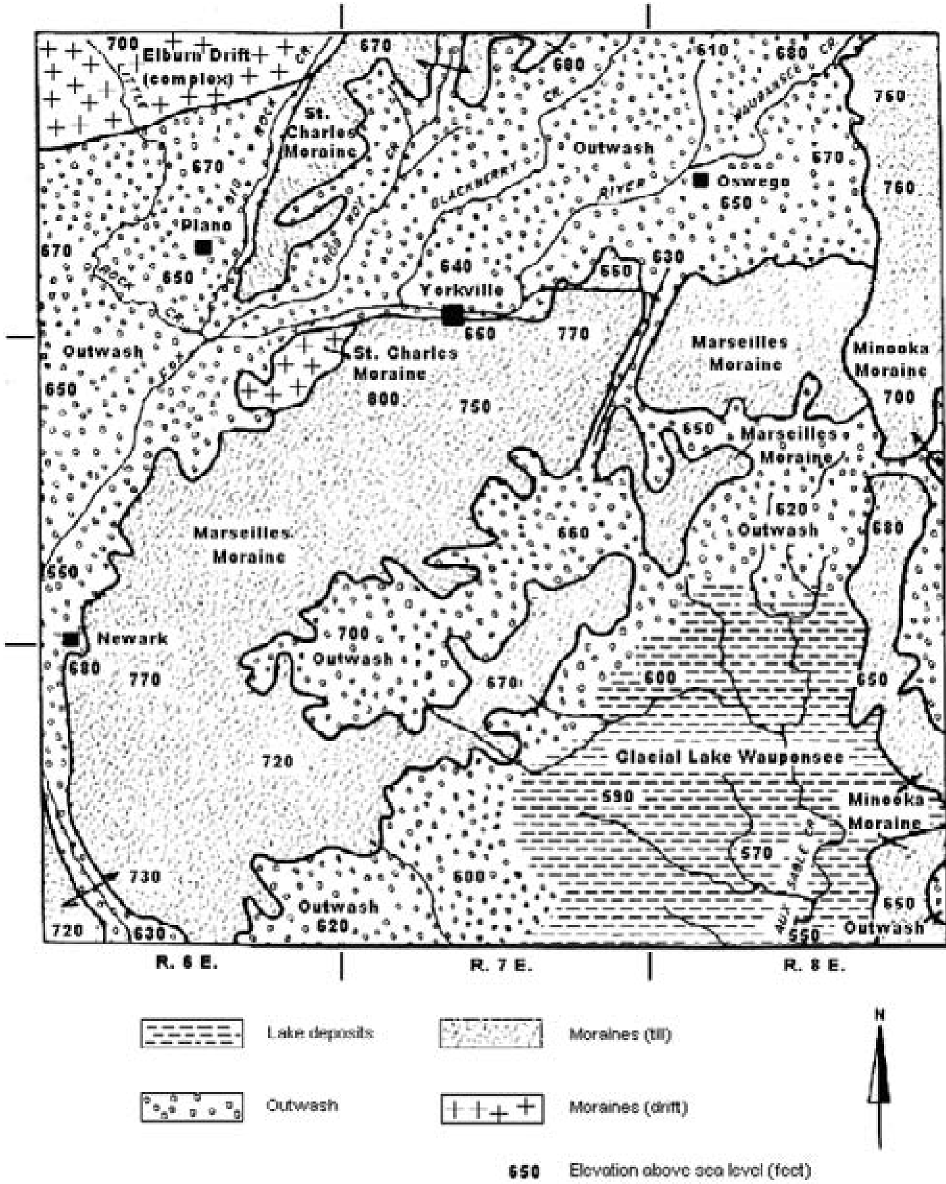

Figure 4.—Glacial features of Kendall County.

Outwash materials were deposited by water flowing at different rates down streams, across plains, or into lakes during the melting of glaciers. The Henry Formation of the Mason Group, which is made up of stratified outwash materials, is the second most dominant parent material in the county after till (Hansel and Johnson, 1996). The variation in water flow resulted in strata of different textures and thickness. Outwash materials thus range from coarse, nearly clean gravel to very fine, nearly pure clay. Typically, however, there are mixtures of two or more particle sizes. In Kendall County the glacial outwash soils have three main texture groups: silt loam to loam, represented by Blackberry and Clare soils; sandy loam to sand, represented by Sparta soils; and sand and gravel, represented by Dresden and Lorenzo soils.

Loess is the silty wind-deposited parent material that blankets much of Kendall County. The loess in Kendall County is from the Peoria Silt Formation of the Mason

Group. The Peoria Silt was deposited from about 25,000 to 12,500 radiocarbon years ago (Hansel and Johnson, 1996). It originated in areas barren of vegetation and exposed to wind currents that could separate the fine particles from the coarser fragments. These areas were typically large bottom lands and valley trains of glacial rivers. In Kendall County the thickness of the loess ranges from as much as 5 feet in the far northwest part of the county to less than $1^1/_2$ feet in the eastern part. Because loess or similar silty material is the dominant surface material, silt loam and silty clay loam are the most common surface textures in the county. The upper part of the profile of Drummer and Plano soils formed in loess.

Lacustrine material was deposited in the relatively still water of glacial lakes. The Equality Formation consists of lacustrine materials formed from glacial lake deposits (Hansel and Johnson, 1996). In the southeastern part of Kendall County, Glacial Lake Wauponsee created an area of lacustrine soils. Lake Wauponsee was formed during the Kankakee Torrent. The Kankakee Torrent was a gigantic glacial flood that resulted from the rapid melting of three glaciers that were concentrated in southern Michigan. The meltwaters then cut across northwestern Indiana and through Will and Kankakee Counties. At its highest stage, this flood of glacial meltwater overflowed the Kankakee Valley and created very large glacial lakes (Lake Wauponsee, Lake Watseka, Lake Ottawa, and Lake Pontiac) that covered most of Iroquois County to the south, most of Grundy County, southeastern Kendall County, and western Will County (Frankie, 1998). After the coarser fragments were deposited as outwash by moving water, the finer particles, such as very fine sand, silt, and clay, settled in still water. Vertical variation is greater than horizontal variation. The strata in lacustrine deposits are commonly thicker than those in glacial outwash. Del Rey and Martinton soils formed in lacustrine materials.

Organic deposits consist of decomposed plant remnants. After the glaciers receded, water was left standing in depressional areas. As a result, these areas were very wet during soil formation, and the decaying plant material accumulated more quickly than it decomposed. Most of these plant remains are decomposed to a point that they are unrecognizable. These organic deposits are called sapric material. Houghton and Lena soils are examples of soils that formed in these deposits.

Alluvium consists of material and sediments deposited by streams and rivers on flood plains. The alluvium in the survey area is part of the Cahokia Formation, which represents mainly “recent alluvium” on modern-day flood plains (Hansel and Johnson, 1996). The texture of alluvium varies, depending on the velocity of the water source and the texture of the sediment in the water. Sawmill soils formed in fine grained alluvium, and Landes soils formed in coarse grained alluvium.

Dolostone and limestone bedrock is common in Lisbon Township in the south-central part of the county and occurs along the Fox River as occasional outcrops (fig. 5). Depth to bedrock varies, and bedrock exposed at the surface accounts for a little over 1 percent of the total surface area in the county. The bedrock is quarried and is an important source of income in the county. Ripon soils and Clare soils that have a bedrock substratum are examples of soils that are deep or moderately deep to bedrock.

Climate

Kendall County has a temperate, humid continental climate. The general climate has had an important overall influence on the characteristics of the soils. However, the climate is essentially uniform throughout the county and has not caused any major differences among the soils. Climate has very important effects on weathering, vegetation, and erosion.

The weathering of minerals in the soil increases as temperature and rainfall increase. Most years, this region has enough rainfall and melted snowfall to moisten

Figure 5.—This active quarry in Lisbon Township provides crushed stone for construction.

all of the soil and underlying materials to the level of the permanent water table. The degree of saturation varies, depending on thickness and permeability of unconsolidated materials, water-holding capacity, and topography. In general, rainfall percolates downward to underground outlets, evaporates, is transpired by plants, or moves across the land surface to streams, carrying with it material in solution and suspension. As water moves downward, clay is moved from the surface soil to the subsoil, where it accumulates. Salts of calcium, magnesium, potassium, and other bases, as well as various organic and inorganic colloids, also are formed. Some accumulate where formed, some are carried away in drainage waters, some are moved to other parts of the soil profile to help form soil horizons, and some are taken up by plants in the form of nutrients. The latter tend to be returned to the local soil area unless removed by animals or humans. Freezing and thawing help to break down rock fragments to smaller and smaller particles, and the action of sun and wind influences many phases of plant and animal life. The climate in Kendall County has generally favored prairie grasses and hardwood forests. Spring rains and wind can cause extensive erosion in areas where crop residue, trees, and other vegetative cover have been removed from the surface. More soil will be lost through erosion each year than is formed by natural processes.

Living Organisms

Living organisms, including all associated plant and animal life, are responsible for the accumulation of organic matter in soils. Three major kinds of plants—tall prairie grasses, swamp and marsh grasses, and deciduous trees—were present when Kendall County was settled and presumably had been in the survey area for a long time. All three types of vegetation produced large amounts of organic matter. However, forest debris accumulated primarily on the soil surface, where most of it decayed rapidly or was burned or eroded away. A relatively small amount was carried by soil organisms into the upper 1 to 5 inches of mineral soil, where it was partially preserved. On the other hand, the organic matter that accumulated from the decaying fibrous root systems of prairie grasses and swamp and marsh grasses was within the mineral soil and was well preserved.

In the virgin or uncultivated state, soils that developed under these types of vegetation have a dark surface layer as the result of an accumulation of organic matter. However, the dark layer is much thicker in prairie soils, typically ranging from 10 to 15 inches. Examples of soils that formed under prairie conditions are Elburn and Blackberry soils. In soils that formed under forest vegetation, the surface layer is generally 1 to 5 inches thick. Mayville and Rush soils are examples. In areas where the two types of vegetation were combined or where forest was encroaching on prairie, the surface layer is 5 to 10 inches thick. Examples of soils that formed in these areas are Kaneville and Virgil soils. Muck soils commonly have an accumulation of organic matter several feet deep and are dark throughout. Houghton and Lena soils are examples.

Bacteria, fungi, and other micro-organisms help to break down the organic material and thus provide nutrients for plants and other soil organisms. The stability of soil aggregates, which are structure units made up of sand, silt, and clay, is affected by microbial activity because cellular excretions from these organisms help to bind soil particles together. Stable aggregates help to maintain soil porosity and promote favorable relationships among soil, water, and air. Moreover, earthworms, crayfish, insects, and burrowing animals tend to incorporate organic material into the soil and to keep soils open and porous.

Human activities also are important factors in Kendall County. These activities include harvesting the native vegetation and plowing the land; cultivating slopes, which leaves soils vulnerable to erosion and deposition; and draining wet soils and irrigating dry ones. Where soils are acid, crushed limestone is applied; where plant nutrients are depleted, fertilizing materials are applied. Extensive excavating, grading, and filling can completely cover the presently developed soil profile and cause a new cycle of soil formation to begin.

Topography

Relief, which includes elevation, topography, and water table levels, largely determines the natural drainage of soils. In Kendall County the slope ranges from 0 to 60 percent. Natural soil drainage classes range from excessively drained on backslopes and summits to very poorly drained in depressions.

Relief affects the depth to the seasonal high water table or natural drainage of the soil by influencing infiltration and runoff rates. The poorly drained Ashkum and Bryce soils occur in low-lying, nearly level areas and have a water table close to the surface for most of the year. The soil pores contain water, which restricts the circulation of air in the soil. Under these conditions, iron and manganese compounds are chemically reduced. As a result, the subsoil is dull gray and mottled. In the more sloping, well drained Camden and Proctor soils, the water table is lower. Some of the rainfall runs off the surface of these soils. The iron and manganese compounds are well oxidized. As a result, the subsoil is brown. Between these extremes, or where the water table fluctuates slowly into and out of the soil profile, these compounds are moderately well oxidized to imperfectly oxidized, resulting in mixed or mottled colors.

Local relief also influences the severity of erosion. Even though some erosion occurs on all sloping soils, the hazard of erosion generally becomes more severe as the slope increases. The runoff of water and the removal of soil material on these slopes result in the formation of soils that have a thinner surface layer.

Time

Time is an important factor in soil formation. The longer soils are exposed to weathering, the more distinctive are their horizons and profiles. However, soil weathering and development cannot always be measured directly in years because

other factors determine the degree to which a profile develops within a given time. Unconsolidated materials weather faster than solid bedrock, so that a soil profile developing in till, for example, will reach a certain stage of development sooner than a soil developing in material derived from bedrock. Yet the profile of each soil becomes more strongly weathered and developed with the passing of time.

Most of the soils in Kendall County began formation with the retreat of the last glacier about 12,500 years ago. On flood plains, however, material is deposited during each flood. This continual deposition slows development. Also, earth-moving activities performed by humans continue to change the soils and thus slow soil development.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 4 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol.* An example is Mollisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Aquoll (*Aqu*, meaning water, plus *oll*, from Mollisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Endoaquolls (*Endo*, meaning within, plus *aquoll*, the suborder of the Mollisols that has an aquic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective Typic identifies the subgroup that typifies the great group. An example is Typic Endoaquolls.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle size, mineral content, cation-exchange activity class, soil temperature regime, soil depth, and reaction. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-silty, mixed, superactive, mesic Typic Endoaquolls.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. An example is the Drummer series.

Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each major soil series recognized in the survey area is described. Each series description is followed by detailed descriptions of the associated soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 2006). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings “Use and Management of the Soils” and “Soil Properties.”

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform

segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. The soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Swygert silty clay loam, 2 to 4 percent slopes, eroded, is a phase of the Swygert series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Casco-Rodman complex, 20 to 30 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits, quarry, is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Andres Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Andres silt loam, 0 to 2 percent slopes; at an elevation of 633 feet; 1,525 feet south and 510 feet east of the northwest corner of sec. 27, T. 30 N., R. 8 E.; Livingston County, Illinois; USGS Campus topographic quadrangle; lat. 41 degrees 02 minutes 52 seconds N. and long. 88 degrees 18 minutes 17 seconds W., NAD 27; UTM Zone 16T, 0390341 easting and 4544894 northing, NAD 83:

Ap—0 to 11 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.

BA—11 to 14 inches; brown (10YR 4/3) clay loam; moderate medium subangular blocky structure; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt1—14 to 19 inches; brown (10YR 4/3) clay loam; moderate fine subangular blocky structure; friable; few very fine roots; common fine distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) weakly cemented iron-manganese concretions throughout; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt2—19 to 26 inches; grayish brown (10YR 5/2) clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots;

common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) weakly cemented iron-manganese concretions throughout; common fine faint gray (10YR 5/1) iron depletions and common fine distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; neutral; clear smooth boundary.

Bt3—26 to 36 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine black (7.5YR 2.5/1) weakly cemented iron-manganese concretions throughout; common fine faint gray (10YR 5/1) iron depletions and common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear smooth boundary.

2Bt4—36 to 50 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure; firm; few very fine roots; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) weakly cemented iron-manganese concretions throughout; many medium prominent gray (N 5/) iron depletions in the matrix; 3 percent gravel; very slightly effervescent; slightly alkaline; clear smooth boundary.

2C—50 to 60 inches; light olive brown (2.5Y 5/4) silty clay loam; massive; firm; few fine black (7.5YR 2.5/1) weakly cemented iron-manganese concretions throughout; many medium prominent gray (N 5/) iron depletions in the matrix; 5 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: Less than 24 inches
Depth to till: 22 to 50 inches
Depth to carbonates: 24 to 55 inches
Depth to the base of soil development: 36 to 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

BA horizon (where present) and Bt horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—2 to 4
Texture—clay loam, loam, sandy clay loam, or silty clay loam
Content of gravel—less than 10 percent

2Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silty clay loam or silt loam
Content of gravel—less than 10 percent

293A—Andres silt loam, 0 to 2 percent slopes

Setting

Landform: Lake plains
Position on the landform: Footslopes and summits

Map Unit Composition

Andres and similar soils: 88 percent
Dissimilar soils: 12 percent

Soils of Minor Extent

Similar soils:
- Soils that are underlain by lacustrine deposits
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have less sand and more clay in the upper one-half of the profile

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Andres Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: Greater than 80 inches
Available water capacity: About 8.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Ashkum Series

Taxonomic classification: Fine, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Ashkum silty clay loam, 0 to 2 percent slopes; at an elevation of 705 feet; 125 feet south and 2,040 feet east of the northwest corner of sec. 22, T. 34 N., R. 11 E.; Will County, Illinois; USGS Manhattan topographic quadrangle; lat. 41 degrees 25 minutes 28 seconds N. and long. 87 degrees 57 minutes 24 seconds W., NAD 27; UTM Zone 16T, 0420054 easting and 4586321 northing, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; many very fine roots; neutral; clear smooth boundary.

A—7 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; neutral; clear smooth boundary.

BAg—12 to 18 inches; dark gray (2.5Y 4/1) silty clay loam; moderate very fine and fine subangular blocky structure; firm; common very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine very dark gray (7.5YR 3/1) very weakly cemented iron-manganese concretions throughout; neutral; clear smooth boundary.

Bg1—18 to 29 inches; grayish brown (2.5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine very dark gray (7.5YR 3/1) very weakly cemented iron-manganese concretions throughout; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; neutral; clear wavy boundary.

2Bg2—29 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium angular blocky; firm; few very fine roots; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine very dark gray (10YR 3/1) very weakly cemented iron-manganese concretions throughout; common fine and medium prominent yellowish brown (10YR 5/8) masses of oxidized iron and faint brown (10YR 5/3) masses of oxidized iron and manganese in the matrix; common fine and medium faint gray (5Y 5/1) iron depletions in the matrix; 8 percent gravel; neutral; gradual wavy boundary.

2BCg—49 to 54 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to weak coarse angular blocky; firm; few very fine roots; common fine very dark gray (10YR 3/1) very weakly cemented iron-manganese concretions throughout; common fine and medium prominent yellowish brown (10YR 5/6) masses of oxidized iron and faint brown (10YR 5/3) masses of oxidized iron and manganese in the matrix; common fine and medium faint gray (2.5Y 5/1) iron depletions in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2Cg—54 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron and faint brown (10YR 5/3) masses of oxidized iron and manganese in the matrix; common fine faint gray (2.5Y 5/1) iron depletions in the matrix; 8 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the colluvium: 15 to 40 inches
Depth to carbonates: 24 to 60 inches
Depth to the base of soil development: 30 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N

Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam or silty clay

2Bg and 2BCg horizons:
Hue—2.5Y, 5Y, 5GY, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam

2Cg horizon:
Hue—2.5Y, 5Y, 5GY, or N
Value—5 or 6
Chroma—0 to 2
Texture—silty clay loam
Content of gravel—less than 10 percent

232A—Ashkum silty clay loam, 0 to 2 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Ashkum and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker surface layer
- Soils that have more clay and less silt in the profile
- Soils that are overlain by light-colored recent deposits

Dissimilar soils:
- The very poorly drained Houghton soils on toeslopes

Properties and Qualities of the Ashkum Soil

Parent material: Colluvium and the underlying till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 7 percent
Shrink-swell potential: High
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Barrington Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Barrington silt loam, 2 to 4 percent slopes; at an elevation of 627 feet; 400 feet north and 190 feet west of the center of sec. 16, T. 30 N., R. 3 E.; Livingston County, Illinois; USGS Long Point topographic quadrangle; lat. 41 degrees 04 minutes 07 seconds N. and long. 88 degrees 52 minutes 54 seconds W., NAD 27; UTM Zone 16T, 0341910 easting and 4548092 northing, NAD 83:

Ap—0 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.

BA—11 to 16 inches; brown (10YR 4/3) silty clay loam; weak fine subangular blocky structure parting to moderate fine granular; friable; few very fine roots; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bt1—16 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—21 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

Bt3—26 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; weak fine prismatic structure parting to moderate medium angular blocky; friable; few distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt4—32 to 37 inches; yellowish brown (10YR 5/4) silt loam; weak fine prismatic structure parting to weak medium angular blocky; friable; very few distinct brown (10YR 4/3) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; very slightly effervescent; slightly alkaline; clear smooth boundary.

2BC—37 to 42 inches; yellowish brown (10YR 5/4) silt loam with thin strata of fine sandy loam; weak fine prismatic structure; friable; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.

2C—42 to 60 inches; yellowish brown (10YR 5/4), stratified silt loam and fine sandy loam; massive; friable; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of the loess or other silty material: 22 to 40 inches

Depth to carbonates: 20 to 40 inches
Depth to the base of soil development: 25 to 45 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

BA horizon (where present) and Bt horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt and 2BC horizons:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loam, silt loam, sandy loam, very fine sandy loam, or clay loam; commonly stratified

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—stratified fine sand to silt loam
Content of gravel—less than 15 percent

443A—Barrington silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Map Unit Composition

Barrington and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are underlain by till
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have outwash at a depth of more than 40 inches

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Barrington Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches

Available water capacity: About 10 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

443B—Barrington silt loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Map Unit Composition

Barrington and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are underlain by till
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have outwash at a depth of more than 40 inches

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Barrington Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Birkbeck Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Birkbeck silt loam, 2 to 5 percent slopes; at an elevation of 680 feet; 750 feet south and 1,600 feet east of the northwest corner of sec. 25, T. 17 N., R. 3 E.; Macon County, Illinois; USGS Argenta topographic quadrangle; lat. 39 degrees 54 minutes 25.3 seconds N. and long. 88 degrees 48 minutes 59.7 seconds W., NAD 27; UTM Zone 16S, 0344716 easting and 4419022 northing, NAD 83:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak thin platy structure parting to moderate very fine granular; friable; slightly acid; abrupt smooth boundary.

E—4 to 9 inches; brown (10YR 4/3) silt loam; moderate very thin platy structure; friable; few distinct dark brown (10YR 3/3) organic coatings and gray (10YR 6/1) (dry) silt coatings on faces of peds; very strongly acid; clear smooth boundary.

Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure parting to moderate very fine granular; friable; common distinct dark brown (10YR 3/3) organo-clay films and light gray (10YR 7/1) (dry) silt coatings on faces of peds; few fine weakly cemented iron-manganese nodules throughout; strongly acid; clear smooth boundary.

Bt2—13 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and very fine subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; few fine weakly cemented iron-manganese nodules throughout; strongly acid; clear smooth boundary.

Bt3—24 to 29 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common fine weakly cemented iron-manganese nodules throughout; strongly acid; clear smooth boundary.

Bt4—29 to 42 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common medium weakly cemented iron-manganese nodules throughout; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine distinct light yellowish brown (2.5Y 6/4) masses of oxidized iron in the matrix; strongly acid; gradual smooth boundary.

Bt5—42 to 54 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; common medium weakly cemented iron-manganese nodules throughout; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine distinct light yellowish brown (2.5Y 6/4) and few medium distinct strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

2Bt6—54 to 60 inches; dark yellowish brown (10YR 4/4) loam; weak coarse subangular blocky structure; friable; few distinct brown (7.5YR 4/4) clay films on

face of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films in pores; few fine weakly cemented iron-manganese nodules throughout; common fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common medium distinct light yellowish brown (2.5Y 6/4) and fine distinct strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; neutral; gradual smooth boundary.

2C—60 to 68 inches; light olive brown (2.5Y 5/4) loam; massive; firm; few distinct very dark grayish brown (10YR 3/2) organo-clay films in pores; few fine weakly cemented iron-manganese nodules throughout; common fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine faint light yellowish brown (2.5Y 6/4) and common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: 40 to 70 inches
Depth to the base of soil development: 40 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 to 5
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—less than 15 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—loam, clay loam, silty clay loam, or silt loam
Content of gravel—less than 15 percent

233A—Birkbeck silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Map Unit Composition

Birkbeck and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker and darker surface layer
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have outwash in the lower part of the profile
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Birkbeck Soil

Parent material: Loess and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 4.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Blackberry Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Blackberry silt loam, 0 to 2 percent slopes; at an elevation of 728 feet; 475 feet south and 770 feet west of the northeast corner of sec. 27, T. 39 N., R. 7 E.; Kane County, Illinois; USGS Sugar Grove topographic quadrangle; lat. 41 degrees 50 minutes 14 seconds N. and long. 88 degrees 25 minutes 04 seconds W., NAD 27; UTM Zone 16T, 0382278 easting and 4632664 northing, NAD 83:

Ap—0 to 4 inches; black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; friable; common very fine and fine roots; neutral; clear smooth boundary.

A—4 to 11 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; weak medium angular blocky structure parting to weak fine granular; friable; common very fine and fine roots; neutral; abrupt smooth boundary.

Bt1—11 to 15 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine and medium angular blocky structure; friable; common very fine roots; common distinct black (10YR 2/1) organic coatings on faces of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few distinct brown (10YR 4/3) clay films on faces of peds; neutral; gradual wavy boundary.

Bt2—15 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and pores; common distinct brown (10YR 4/3) clay films on faces of peds; neutral; gradual wavy boundary.

Bt3—24 to 35 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine to medium roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine distinct dark yellowish brown (10YR 4/6) masses of oxidized iron in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; gradual wavy boundary.

Bt4—35 to 44 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine to medium roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine distinct dark yellowish brown (10YR 4/6) masses of oxidized iron in the matrix; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; gradual wavy boundary.

Bt5—44 to 52 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine irregular very dark gray (10YR 3/1) very weakly cemented iron-manganese concretions throughout; common fine distinct strong brown (7.5YR 4/6) masses of oxidized iron in the matrix; many medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; gradual wavy boundary.

2Bt6—52 to 58 inches; yellowish brown (10YR 5/4) loam; weak medium prismatic structure parting to weak medium and coarse subangular blocky; friable; few distinct brown (10YR 4/3) clay films on vertical faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

2Bt7—58 to 68 inches; brown (10YR 4/3) gravelly clay loam; weak medium and coarse subangular blocky structure; friable; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium distinct yellowish brown (10YR 5/6) and prominent strong brown (7.5YR 4/6) masses of oxidized iron in the matrix; 18 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

2C—68 to 80 inches; brown (10YR 4/3) gravelly clay loam; massive; very friable; common medium prominent strong brown (7.5YR 4/6) and distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 23 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 45 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—loam, clay loam, silt loam, silty clay loam, sandy loam, or sandy clay loam or the gravelly analogs of these textures; stratified in some pedons
Content of gravel—less than 20 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam, clay loam, silt loam, sandy loam, or loamy sand or the gravelly analogs of these textures; stratified in some pedons
Content of gravel—less than 25 percent

679A—Blackberry silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits

Map Unit Composition

Blackberry and similar soils: 98 percent
Dissimilar soils: 2 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have slopes of more than 2 percent
- Soils that have till in the lower part of the profile
- Soils that have a thinner surface layer

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Blackberry Soil

Parent material: Loess over outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

679B—Blackberry silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and backslopes

Map Unit Composition

Blackberry and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have a thinner surface layer
- Soils that have slopes of less than 2 percent or more than 5 percent

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Blackberry Soil

Parent material: Loess over outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Brenton Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Brenton silt loam, 0 to 2 percent slopes; at an elevation of 612 feet; 60 feet west and 1,760 feet south of the northeast corner of sec. 29, T. 30 N., R. 4 E.; Livingston County, Illinois; USGS Streator South topographic quadrangle; lat. 41 degrees 02 minutes 33 seconds N. and long. 88 degrees 46 minutes 39 seconds W., NAD 27; UTM Zone 16T, 0350596 easting and 4545001 northing, NAD 83:

Ap—0 to 12 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; neutral; abrupt smooth boundary.
Bt1—12 to 18 inches; dark grayish brown (10YR 4/2) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.
Bt2—18 to 24 inches; brown (10YR 5/3) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.
Bt3—24 to 28 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.
2Bt4—28 to 34 inches; grayish brown (10YR 5/2) clay loam; weak fine prismatic structure parting to weak fine angular blocky; friable; few very fine roots; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine prominent strong brown (7.5YR 5/6) weakly cemented iron-manganese concentrations throughout; common fine prominent yellowish brown (10YR 5/6) masses of

oxidized iron in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt5—34 to 44 inches; grayish brown (10YR 5/2) sandy loam; weak fine prismatic structure; friable; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Cg—44 to 60 inches; grayish brown (10YR 5/2), stratified sandy loam and loamy sand; massive; very friable; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 4 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: 24 to 40 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to more than 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 7
Chroma—1 to 8
Texture—clay loam, sandy loam, or silt loam
Content of gravel—less than 5 percent

2Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 7
Chroma—1 to 8
Texture—stratified loam, sandy loam, clay loam, or loamy sand
Content of gravel—less than 15 percent

101A—Brenton silt loam, 0 to 2 percent slopes, bedrock substratum

Setting

Landform: Outwash plains and lake plains
Position on the landform: Footslopes and summits

Map Unit Composition

Brenton and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have bedrock at a depth of less than 40 inches or more than 60 inches
- Soils that have till or outwash in the lower part of the profile
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Pella soils that have a bedrock substratum; on toeslopes

Properties and Qualities of the Brenton Soil

Parent material: Loess or other silty material and the underlying outwash over limestone and dolostone
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very slow to moderately slow
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 8.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

149A—Brenton silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Footslopes and summits

Map Unit Composition

Brenton and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 2 percent
- Soils that have carbonates within a depth of 40 inches
- Soils that are underlain by till
- Soils that have outwash at a depth of more than 40 inches
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The well drained Proctor soils on summits
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Brenton Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Bryce Series

Taxonomic classification: Fine, mixed, superactive, mesic Vertic Endoaquolls

Typical Pedon

Bryce silty clay, 0 to 2 percent slopes; at an elevation of 675 feet; 2,559 feet north and 45 feet west of the center of sec. 7, T. 25 N., R. 13 W.; Iroquois County, Illinois; USGS Woodworth topographic quadrangle; lat. 40 degrees 38 minutes 39 seconds N. and long. 87 degrees 52 minutes 23 seconds W., NAD 27; UTM Zone 16T, 0426178 easting and 4499628 northing, NAD 83:

Ap1—0 to 10 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; weak very fine granular structure; friable; few fine black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; slightly acid; abrupt smooth boundary.

Ap2—10 to 13 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate medium angular blocky structure; friable; moderately acid; abrupt smooth boundary.

Bg—13 to 19 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; many distinct black (10YR 2/1) organic coatings on faces of peds; common fine distinct dark grayish brown (2.5Y 4/2) and few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear wavy boundary.

Btg1—19 to 24 inches; dark grayish brown (2.5Y 4/2) silty clay; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; many distinct dark gray (10YR 4/1) clay films on faces of peds; many distinct black (N 2.5/) organo-clay films on faces of peds; common fine prominent

yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear wavy boundary.

Btg2—24 to 35 inches; olive gray (5Y 5/2) silty clay; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few slickensides on faces of peds; common distinct olive gray (5Y 4/2) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; common fine faint dark gray (2.5Y 4/1) iron depletions in the matrix; neutral; gradual smooth boundary.

Btg3—35 to 45 inches; gray (5Y 5/1) silty clay; weak coarse prismatic structure parting to weak coarse subangular blocky; firm; few fine roots; common distinct dark gray (5Y 4/1) clay films on faces of peds; few slickensides and pressure faces on peds; common medium prominent light olive brown (2.5Y 5/4) and few medium prominent dark yellowish brown (10YR 4/4) masses of oxidized iron and manganese in the matrix; slightly alkaline; clear smooth boundary.

2BCg—45 to 58 inches; gray (5Y 5/1) silty clay; weak very coarse prismatic structure; very firm; few fine white (10YR 8/1) very weakly cemented calcium carbonate nodules and weakly cemented calcium carbonate concretions throughout; common coarse prominent brown (10YR 4/3) masses of oxidized iron and manganese and common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 1 percent fine gravel; slightly effervescent; moderately alkaline; clear smooth boundary.

2Cg—58 to 66 inches; gray (5Y 5/1) silty clay; massive; very firm; many medium prominent olive brown (2.5Y 4/4) masses of oxidized iron and manganese in the matrix; 3 percent fine gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the colluvium: 15 to 55 inches
Depth to carbonates: 24 to 60 inches
Depth to the base of soil development: 30 to more than 60 inches

Ap or A horizon:
Hue—10YR or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay

Bg and Btg horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 3
Texture—silty clay or clay
Content of gravel—less than 5 percent

2BCg and/or 2Cg horizon:
Hue—2.5Y or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—commonly silty clay or clay; less commonly silty clay loam
Content of gravel—less than 10 percent

235A—Bryce silty clay, 0 to 2 percent slopes

Setting

Landform: Glacial lakes (relict) and ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Bryce and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay and more silt in the upper part of the profile
- Soils that have a thicker surface layer
- Soils that are overlain by light-colored recent deposits

Dissimilar soils:
- The somewhat poorly drained Swygert soils on summits and footslopes

Properties and Qualities of the Bryce Soil

Parent material: Colluvium and the underlying till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 7 percent
Shrink-swell potential: High
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Camden Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Camden silt loam, 2 to 5 percent slopes; at an elevation of 720 feet; 30 feet north and 100 feet west of the southeast corner of sec. 6, T. 22 N., R. 14 W.; Champaign County, Illinois; USGS Rankin topographic quadrangle; lat. 40 degrees 23 minutes

06.1 seconds N. and long. 87 degrees 58 minutes 16.1 seconds W., NAD 27; UTM Zone 16T, 0417570 easting and 4470947 northing, NAD 83:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine and very fine granular structure; friable; neutral; abrupt smooth boundary.

E—9 to 14 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; moderate thin platy structure; friable; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; neutral; abrupt smooth boundary.

Bt1—14 to 18 inches; yellowish brown (10YR 5/4) silt loam; weak very fine subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; neutral; clear smooth boundary.

Bt2—18 to 22 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; slightly acid; clear smooth boundary.

Bt3—22 to 28 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; many distinct brown (10YR 4/3) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron-manganese nodules throughout; moderately acid; clear smooth boundary.

Bt4—28 to 35 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; common fine and medium irregular black (7.5YR 2.5/1) very weakly cemented iron-manganese nodules throughout; 3 percent chert pebbles; moderately acid; clear smooth boundary.

2Bt5—35 to 52 inches; yellowish brown (10YR 5/6) loam; moderate coarse prismatic structure parting to weak medium subangular blocky; friable; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; common fine and medium irregular black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; 5 percent chert and quartz pebbles; moderately acid; clear smooth boundary.

2Bt6—52 to 62 inches; brown (10YR 4/3) and yellowish brown (10YR 5/4) sandy loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable; few faint brown (10YR 4/3) clay bridges between sand grains; few fine faint brown (10YR 5/3) masses of oxidized iron and manganese in the matrix; few fine rounded black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; 5 percent chert and quartz pebbles; moderately acid; clear smooth boundary.

2C—62 to 80 inches; yellowish brown (10YR 5/4 and 5/6), stratified sandy loam, loam, and sandy clay loam; massive; very friable; moderately acid.

Range in Characteristics

Thickness of the loess or other silty material: 24 to 40 inches
Depth to carbonates: More than 60 inches
Depth to the base of the argillic horizon: 30 to 65 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam

E or BE horizon (where present):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loam, clay loam, or sandy loam
Content of rock fragments—0 to 10 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—stratified loamy sand, sandy loam, loam, or sandy clay loam
Content of rock fragments—0 to 13 percent

134C2—Camden silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Shoulders and backslopes

Map Unit Composition

Camden and similar soils: 97 percent
Dissimilar soils: 3 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that are underlain by till
- Soils that have outwash at a depth of more than 40 inches
- Soils that have slopes of less than 5 percent or more than 10 percent

Dissimilar soils:
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Camden Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Campton Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Campton silt loam, 2 to 5 percent slopes; at an elevation of 870 feet; 1,500 feet south and 2,000 feet west of the northeast corner of sec. 27, T. 40 N., R. 6 E.; Kane County, Illinois; USGS Maple Park topographic quadrangle; lat. 41 degrees 55 minutes 11 seconds N. and long. 88 degrees 32 minutes 04 seconds W., NAD 27; UTM Zone 16T, 0372749 easting and 4642017 northing, NAD 83:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; common very fine roots; neutral; abrupt smooth boundary.

Bt1—8 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels and pores; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; neutral; clear smooth boundary.

Bt2—13 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds and in pores; neutral; gradual wavy boundary.

Bt3—19 to 27 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine irregular black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; common fine faint brown (7.5YR 5/4) and common fine prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear wavy boundary.

Bt4—27 to 33 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine irregular black (7.5YR 2.5/1) very weakly

cemented iron-manganese concretions throughout; common fine distinct and prominent strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; gradual wavy boundary.

Bt5—33 to 45 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse prismatic structure parting to weak medium subangular blocky; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine irregular black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; common fine distinct and prominent strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron in the matrix; many fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; gradual wavy boundary.

2BC—45 to 51 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable; few fine irregular black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; common fine distinct and prominent strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 4 percent gravel; strongly acid; clear wavy boundary.

2C1—51 to 58 inches; yellowish brown (10YR 5/4) loamy sand; single grain; loose; common fine distinct and prominent strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron in the matrix; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 4 percent gravel; strongly acid; gradual wavy boundary.

2C2—58 to 65 inches; dark yellowish brown (10YR 4/4) sandy loam; massive; very friable; common fine distinct and prominent strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 2 percent gravel; slightly acid; gradual wavy boundary.

2Cg—65 to 80 inches; light brownish gray (2.5Y 6/2) loam; massive; friable; common fine irregular black (7.5YR 2.5/1) very weakly cemented manganese concretions throughout; common fine prominent strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron in the matrix; 1 percent gravel; slightly acid.

Range in Characteristics

Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 48 to 72 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam

E horizon (where present):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt and/or 2BC horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam, loam, sandy loam, clay loam, or sandy clay loam
Content of gravel—less than 15 percent

2C or 2Cg horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam, loam, sandy loam, or loamy sand or the gravelly analogs of these textures; stratified in some pedons
Content of gravel—less than 20 percent

680A—Campton silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits

Map Unit Composition

Campton and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker and darker surface layer
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Campton Soil

Parent material: Loess and the underlying outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

680B—Campton silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Campton and similar soils: 93 percent
Dissimilar soils: 7 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker and darker surface layer
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Campton Soil

Parent material: Loess and the underlying outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Casco Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Inceptic Hapludalfs

Typical Pedon

Casco silt loam, in an area of Hennepin-Casco complex, 30 to 60 percent slopes; at an elevation of 660 feet; 2,400 feet south and 2,030 feet east of the northwest corner of sec. 28, T. 17 N., R. 9 E.; Bureau County, Illinois; USGS Princeton North topographic quadrangle; lat. 41 degrees 25 minutes 48 seconds N. and long. 89 degrees 27 minutes 50 seconds W., NAD 27; UTM Zone 16T, 0294122 easting and 4589432 northing, NAD 83:

A—0 to 7 inches; dark brown (10YR 3/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

Bt—7 to 15 inches; brown (10YR 4/3) gravelly loam; moderate fine and medium subangular blocky structure; friable; few fine roots; common distinct dark brown (10YR 3/3) clay films on faces of peds; 30 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C1—15 to 31 inches; dark yellowish brown (10YR 4/4), stratified sand and gravel; single grain; loose; 40 percent gravel; violently effervescent; slightly alkaline; clear smooth boundary.

2C2—31 to 60 inches; yellowish brown (10YR 5/4), stratified sand and gravel; single grain; loose; 60 percent gravel; violently effervescent; slightly alkaline.

Range in Characteristics

Depth to stratified sandy and gravelly deposits: 10 to 20 inches
Depth to carbonates: 10 to 20 inches

Ap or A horizon:
Hue—10YR or 7.5YR
Value—2 to 4
Chroma—1 to 3
Texture—loam or silt loam
Content of gravel—less than 10 percent
Content of cobbles—less than 5 percent

Bt horizon:
Hue—10YR, 7.5YR, or 5YR
Value—3 to 5
Chroma—3 or 4
Texture—sandy clay loam, loam, or clay loam or the gravelly analogs of these textures
Content of gravel—less than 35 percent
Content of cobbles—less than 5 percent

2C horizon:
Hue—10YR or 7.5YR
Value—4 to 7
Chroma—3 or 4
Texture—stratified sand or coarse sand or the gravelly, very gravelly, or extremely gravelly analogs of these textures or has strata of gravel
Content of gravel—less than 80 percent
Content of cobbles—less than 20 percent

820E—Hennepin-Casco complex, 12 to 30 percent slopes

Setting

Landform: Ground moraines, end moraines, and stream terraces
Position on the landform: Backslopes

Map Unit Composition

Hennepin and similar soils: 50 percent
Casco and similar soils: 35 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have till or gravelly outwash at a depth of more than 20 inches
- Soils that have slopes of less than 12 percent or more than 30 percent
- Soils that are moderately eroded
- Soils that have carbonates at a depth of more than 20 inches

Dissimilar soils:
- Severely eroded soils on shoulders and backslopes
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Hennepin Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Casco Soil

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High

Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hennepin—6e; Casco—6e
Prime farmland category: Not prime farmland
Hydric soil status: Hennepin—not hydric; Casco—not hydric

820G—Hennepin-Casco complex, 30 to 60 percent slopes

Setting

Landform: Stream terraces, ground moraines, and end moraines
Position on the landform: Backslopes

Map Unit Composition

Hennepin and similar soils: 50 percent
Casco and similar soils: 35 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 20 inches
- Soils that are moderately eroded
- Soils that have till or gravelly outwash at a depth of more than 20 inches
- Soils that have slopes of less than 30 percent or more than 60 percent

Dissimilar soils:
- Severely eroded soils on shoulders and backslopes
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Hennepin Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Casco Soil

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches

Available water capacity: About 4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hennepin—7e; Casco—7e
Prime farmland category: Not prime farmland
Hydric soil status: Hennepin—not hydric; Casco—not hydric

969E2—Casco-Rodman complex, 12 to 20 percent slopes, eroded

Setting

Landform: Kames, outwash plains, end moraines, and stream terraces
Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 50 percent
Rodman and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are slightly eroded
- Soils that have sandy and gravelly outwash at a depth of more than 20 inches
- Soils that have carbonates at or near the surface
- Soils that have till in the lower part of the profile
- Soils that have slopes of less than 12 percent or more than 20 percent

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes
- Soils that are severely eroded

Properties and Qualities of the Casco Soil

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 2.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: High
Susceptibility to wind erosion: Negligible

Interpretive Groups

Land capability classification: Casco—6e; Rodman—6s
Prime farmland category: Not prime farmland
Hydric soil status: Casco—not hydric; Rodman—not hydric

969F—Casco-Rodman complex, 20 to 30 percent slopes

Setting

Landform: Outwash plains, kames, stream terraces, and end moraines
Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 50 percent
Rodman and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have sandy and gravelly outwash at a depth of more than 20 inches
- Soils that have carbonates at or near the surface
- Soils that have till in the lower part of the profile
- Soils that have slopes of less than 20 percent or more than 30 percent

Dissimilar soils:
- Severely eroded soils on shoulders and backslopes
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Casco Soil

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 3.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 2.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Negligible

Interpretive Groups

Land capability classification: Casco—7e; Rodman—7s
Prime farmland category: Not prime farmland
Hydric soil status: Casco—not hydric; Rodman—not hydric

Catlin Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Catlin silt loam, 0 to 2 percent slopes; at an elevation of 830 feet; 650 feet south and 571 feet east of the northwest corner of sec. 36, T. 42 N., R. 2 E.; Ogle County, Illinois; USGS Fairdale topographic quadrangle; lat. 42 degrees 04 minutes 38 seconds N. and long. 88 degrees 57 minutes 17 seconds W., NAD 27; UTM Zone 16T, 0338307 easting and 4660199 northing, NAD 83:

Ap—0 to 11 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.
BA—11 to 18 inches; brown (10YR 4/3) silt loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; few faint dark brown (10YR 3/3) organic coatings on faces of peds; common distinct light gray

(10YR 7/1) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.

Bt1—18 to 23 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to strong fine and medium subangular blocky; friable; many faint brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.

Bt2—23 to 31 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to strong medium angular and subangular blocky; firm; few distinct very dark brown (10YR 2/2) organo-clay films in root channels; many faint brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; few black (N 2.5/) weakly cemented iron-manganese concretions throughout; few fine distinct brown (7.5YR 4/4) masses of oxidized iron and manganese and common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.

Bt3—31 to 36 inches; yellowish brown (10YR 5/4) silty clay loam; strong medium prismatic structure parting to strong medium angular and subangular blocky; firm; common prominent grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; few black (N 2.5/) weakly cemented iron-manganese concretions throughout; few fine distinct brown (7.5YR 4/4) masses of oxidized iron and manganese and common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

Bt4—36 to 44 inches; yellowish brown (10YR 5/4), brown (7.5YR 4/4), and light brownish gray (2.5Y 6/2) silty clay loam; weak coarse prismatic structure parting to moderate coarse subangular blocky; firm; many faint grayish brown (2.5Y 5/2) clay films on faces of peds; common distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; few distinct very dark brown (10YR 2/2) organo-clay films in root channels; slightly acid; abrupt smooth boundary.

2Bt5—44 to 49 inches; dark yellowish brown (10YR 4/4) clay loam; weak coarse subangular blocky structure; firm; few faint brown (10YR 5/3) clay films on vertical faces of peds; few distinct very dark brown (10YR 2/2) organo-clay films in root channels; slightly alkaline; clear smooth boundary.

2C—49 to 60 inches; yellowish brown (10YR 5/4) loam; massive; firm; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: 40 to 60 inches
Depth to the base of soil development: 45 to 65 inches

Ap horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

BA horizon (where present) and Bt horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 8
Texture—loam or clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 8
Texture—loam
Content of gravel—less than 10 percent

171A—Catlin silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits

Map Unit Composition

Catlin and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have till within a depth of 40 inches
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have outwash in the lower part of the profile
- Soils that have slopes of more than 2 percent
- Soils that have more clay and less sand in the middle and lower parts of the profile

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Catlin Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

171B—Catlin silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Map Unit Composition

Catlin and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that have till within a depth of 40 inches
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have outwash in the lower part of the profile
- Soils that have more clay and less sand in the middle and lower parts of the profile

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Catlin Soil

Parent material: Loess over till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Chenoa Series

Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon

Chenoa silty clay loam, 0 to 2 percent slopes; at an elevation of 691 feet; 105 feet south and 865 feet west of the northeast corner of sec. 2, T. 27 N., R. 3 E.; Livingston County, Illinois; USGS Flanagan South topographic quadrangle; lat. 40 degrees 50 minutes 31 seconds N. and long. 88 degrees 50 minutes 13 seconds W., NAD 27; UTM Zone 16T, 0345124 easting and 4522838 northing, NAD 83:

Ap—0 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.

BA—12 to 16 inches; brown (10YR 4/3) silty clay loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—21 to 26 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; many distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

Btg2—26 to 32 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few very fine roots; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; common medium black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common medium faint gray (10YR 5/1) iron depletions in the matrix; neutral; clear smooth boundary.

2Bt—32 to 36 inches; light olive brown (2.5Y 5/4) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few very fine roots; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common medium distinct gray (2.5Y 6/1) iron depletions in the matrix; 3 percent gravel; slightly alkaline; clear smooth boundary.

2C—36 to 60 inches; light olive brown (2.5Y 5/4) silty clay loam; massive with evidence of vertical cleavage; firm; few prominent light brownish gray (10YR 6/2) coatings on vertical cleavage planes; common medium distinct gray (2.5Y 6/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: 25 to 45 inches
Depth to the base of soil development: 25 to 50 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silty clay loam

Bt and/or Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silty clay

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of gravel—2 to 10 percent

614A—Chenoa silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and footslopes

Map Unit Composition

Chenoa and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have till at a depth of less than 20 inches or more than 40 inches
- Soils that have more sand and less silt in the upper one-half of the profile
- Soils that are underlain by lacustrine deposits
- Soils that have a thinner surface layer
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Chenoa Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent

Shrink-swell potential: High
Depth and months of highest perched seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

614B—Chenoa silty clay loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and footslopes

Map Unit Composition

Chenoa and similar soils: 88 percent
Dissimilar soils: 12 percent

Soils of Minor Extent

Similar soils:
- Soils that have till at a depth of less than 20 inches or more than 40 inches
- Soils that have more sand and less silt in the upper one-half of the profile
- Soils that are moderately eroded
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Chenoa Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Depth and months of highest perched seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Clare Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Typical Pedon

Clare silt loam, 0 to 2 percent slopes; at an elevation of 750 feet; 1,200 feet north and 2,200 feet east of the southwest corner of sec. 7, T. 42 N., R. 3 E.; De Kalb County, Illinois; USGS Cherry Valley topographic quadrangle; lat. 42 degrees 07 minutes 32 seconds N. and long. 88 degrees 55 minutes 51 seconds W., NAD 27; UTM Zone 16T, 0340388 easting and 4665526 northing, NAD 83:

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

A—5 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium subangular blocky structure; friable; common very fine roots; neutral; clear smooth boundary.

BA—11 to 14 inches; 60 percent dark yellowish brown (10YR 4/4) and 40 percent very dark grayish brown (10YR 3/2) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; neutral; gradual wavy boundary.

Bt1—14 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure parting to weak fine and medium subangular blocky; friable; common fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores: common distinct brown (10YR 4/3) clay films on faces of peds; neutral; gradual wavy boundary.

Bt2—21 to 28 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; common fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; slightly acid; gradual wavy boundary.

Bt3—28 to 32 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium and coarse subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly acid; gradual wavy boundary.

2Bt4—32 to 37 inches; dark yellowish brown (10YR 4/4) loam; moderate medium and coarse subangular blocky structure; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; common medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; clear wavy boundary.

2Bt5—37 to 45 inches; brown (7.5YR 4/4) sandy loam; weak medium and coarse angular blocky structure; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; common medium distinct dark grayish

brown (10YR 4/2) iron depletions in the matrix; 2 percent gravel; neutral; gradual wavy boundary.

2Bt6—45 to 61 inches; brown (7.5YR 4/4) clay loam; weak medium and coarse angular blocky structure; friable; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; few distinct brown (10YR 4/3) clay films on faces of peds; common medium rounded black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; common medium rounded yellowish brown (10YR 5/6) very weakly cemented iron concretions throughout; 5 percent gravel; neutral; clear smooth boundary.

2C—61 to 80 inches; brown (7.5YR 5/4), stratified gravelly sandy loam and loam; massive; friable; 17 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

BA horizon (where present) and Bt horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loam, sandy loam, clay loam, silt loam, sandy clay loam, or silty clay loam
Content of gravel—less than 15 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—stratified loam and sandy loam or the gravelly analogs of these textures with thin strata of loamy sand or sand
Content of gravel—2 to 20 percent

137A—Clare silt loam, 0 to 2 percent slopes, bedrock substratum

Setting

Landform: Outwash plains and lake plains (fig. 6)
Position on the landform: Summits

Map Unit Composition

Clare and similar soils: 100 percent

Figure 6.—An area of Clare silt loam, 0 to 2 percent slopes, bedrock substratum, next to a quarry in Lisbon Township.

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have bedrock at a depth of less than 40 inches or more than 60 inches
- Soils that have more sand and less silt in the control section
- Soils that have till or outwash in the lower part of the profile

Properties and Qualities of the Clare Soil

Parent material: Loess or other silty material and the underlying outwash over limestone and dolostone
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very slow to moderately slow
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

137B—Clare silt loam, 2 to 5 percent slopes, bedrock substratum

Setting

Landform: Lake plains and outwash plains
Position on the landform: Backslopes and summits

Map Unit Composition

Clare and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have bedrock at a depth of less than 40 inches or more than 60 inches
- Soils that have more sand and less silt in the control section
- Soils that have till or outwash in the lower part of the profile

Properties and Qualities of the Clare Soil

Parent material: Loess or other silty material and the underlying outwash over limestone and dolostone
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very slow to moderately slow
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 8.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

663A—Clare silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Map Unit Composition

Clare and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have outwash at a depth of more than 40 inches
- Soils that have carbonates within a depth of 40 inches
- Soils that are underlain by till

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Clare Soil

Parent material: Loess over outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

663B—Clare silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Clare and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have outwash at a depth of more than 40 inches
- Soils that have carbonates within a depth of 40 inches
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that are underlain by till

Dissimilar soils:
• The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Clare Soil

Parent material: Loess over outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Danabrook Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Danabrook soil in map unit 512C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalf.

Typical Pedon

Danabrook silt loam, 2 to 5 percent slopes; at an elevation of 872 feet; 176 feet south and 2,334 feet west of the northeast corner of sec. 5, T. 42 N., R. 5 E.; De Kalb County, Illinois; USGS Riley topographic quadrangle; lat. 42 degrees 09 minutes 09 seconds N. and long. 88 degrees 40 minutes 28 seconds W., NAD 27; UTM Zone 16T, 0361649 easting and 4668068 northing, NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak very fine and fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.
A—8 to 13 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.
Bt1—13 to 21 inches; brown (10YR 4/3) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; few faint dark brown (10YR 3/3) clay films and very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; neutral; clear smooth boundary.
Bt2—21 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; few very fine roots; common

faint brown (10YR 4/3) clay films on faces of peds and in pores; common fine dark brown (7.5YR 3/3) very weakly cemented iron-manganese concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear wavy boundary.

Bt3—26 to 33 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; many faint brown (10YR 4/3) clay films on faces of peds and in pores; common fine dark brown (7.5YR 3/3) very weakly cemented iron-manganese concretions throughout; many fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear wavy boundary.

2Bt4—33 to 42 inches; brown (7.5YR 5/4) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common faint brown (10YR 4/3) clay films on faces of peds and in pores; common fine dark brown (7.5YR 3/3) very weakly cemented iron-manganese concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 6 percent gravel; slightly alkaline; clear wavy boundary.

2BC—42 to 50 inches; brown (7.5YR 5/4) loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; gradual wavy boundary.

2C—50 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; many fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 10 percent gravel; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the dark surface layer: 7 to 20 inches
Thickness of the loess or other silty material: 22 to 40 inches
Depth to carbonates: 30 to 50 inches
Depth to the base of soil development: 30 to 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt and/or 2BC horizon:
Hue—7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, clay loam, or sandy clay loam
Content of gravel—2 to 15 percent

2C horizon:
Hue—7.5YR
Value—4 to 6

Chroma—3 to 6
Texture—loam or sandy loam
Content of gravel—2 to 15 percent

512A—Danabrook silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits

Map Unit Composition

Danabrook and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand and less silt in the upper and middle parts of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Drummer and Elpaso soils on toeslopes

Properties and Qualities of the Danabrook Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

512B—Danabrook silt loam, 2 to 5 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Summits and backslopes

Map Unit Composition

Danabrook and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have more sand and less silt in the upper and middle parts of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 2 percent or more than 5 percent

Dissimilar soils:
- The poorly drained Drummer and Elpaso soils on toeslopes

Properties and Qualities of the Danabrook Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

512C2—Danabrook silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Danabrook and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have more sand and less silt in the upper and middle parts of the profile

- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that are underlain by outwash
- Soils that have slopes of less than 5 percent or more than 10 percent

Dissimilar soils:
- Nearly level, somewhat poorly drained soils on summits and footslopes
- The poorly drained Drummer and Elpaso soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Danabrook Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Del Rey Series

Taxonomic classification: Fine, illitic, mesic Aeric Epiaqualfs

Typical Pedon

Del Rey silt loam, 0 to 2 percent slopes; at an elevation of 663 feet; 155 feet south and 900 feet west of the northeast corner of sec. 1, T. 25 N., R. 11 E.; Iroquois County, Illinois; USGS Onarga West topographic quadrangle; lat. 40 degrees 40 minutes 43 seconds N. and long. 88 degrees 00 minutes 13 seconds W., NAD 27; UTM Zone 16T, 0415182 easting and 4503569 northing, NAD 83:

A—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine and medium granular structure; friable; many fine roots; neutral; abrupt smooth boundary.
E—4 to 9 inches; light brownish gray (10YR 6/2) silt loam, light gray (10YR 7/2) dry; moderate thin and medium platy structure; friable; many fine roots; moderately acid; abrupt smooth boundary.
Bt—9 to 12 inches; brown (10YR 5/3) silty clay loam; strong fine subangular blocky structure; firm; common fine roots; many distinct grayish brown (10YR 5/2) clay

films and pale brown (10YR 6/3) (dry) clay depletions on faces of peds; very strongly acid; clear smooth boundary.

Btg1—12 to 25 inches; light brownish gray (2.5Y 6/2) silty clay; strong fine and medium subangular blocky structure; firm; common fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; very strongly acid; clear smooth boundary.

Btg2—25 to 33 inches; 50 percent light brownish gray (2.5Y 6/2), 30 percent light olive brown (2.5Y 5/4), and 20 percent gray (10YR 6/1) silty clay; moderate fine and medium angular and subangular blocky structure; firm; common fine roots; many distinct grayish brown (2.5Y 5/2) clay films on faces of peds; strongly acid; gradual smooth boundary.

BCtg—33 to 41 inches; 35 percent light brownish gray (2.5Y 6/2), 35 percent gray (10YR 6/1), and 30 percent light olive brown (2.5Y 5/4) silty clay loam; weak coarse angular and subangular blocky structure; firm; few fine roots; common distinct grayish brown (2.5Y 5/2) clay films on vertical faces of peds; slightly alkaline; gradual smooth boundary.

Cg—41 to 60 inches; 55 percent grayish brown (10YR 5/2) and 45 percent yellowish brown (10YR 5/6 and 5/8) silty clay loam; massive; friable; few distinct light gray (10YR 7/1) (dry) clay depletions on bedding planes; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 24 to 48 inches
Depth to the base of soil development: 24 to 48 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Bt, Btg, and/or BCtg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silty clay

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silt loam or silty clay loam

192A—Del Rey silt loam, 0 to 2 percent slopes

Setting

Landform: Lake plains
Position on the landform: Summits and footslopes

Map Unit Composition

Del Rey and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have more silt and less clay in the control section
- Soils that have a thicker and darker surface layer
- Soils that have till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Ashkum and Milford soils on toeslopes

Properties and Qualities of the Del Rey Soil

Parent material: Lacustrine deposits
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Dresden Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalfs

Typical Pedon

Dresden silt loam, 2 to 4 percent slopes; at an elevation of 580 feet; 1,460 feet south and 140 feet east of the northwest corner of sec. 10, T. 34 N., R. 9 E.; Will County, Illinois; USGS Channahon topographic quadrangle; lat. 41 degrees 26 minutes 42 seconds N. and long. 88 degrees 11 minutes 41 seconds W., NAD 27; UTM Zone 16T, 0400202 easting and 4588865 northing, NAD 83:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium granular structure; friable; common very fine roots; neutral; gradual wavy boundary.

E—7 to 10 inches; brown (10YR 4/3) silt loam; weak thin platy structure; friable; common fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds and in pores; neutral; gradual wavy boundary.

2Bt1—10 to 16 inches; brown (7.5YR 4/3) clay loam; moderate fine and medium prismatic structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; neutral; gradual wavy boundary.

2Bt2—16 to 24 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; common very fine roots; many prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few fine distinct strong brown (7.5YR 5/6) weakly cemented iron-manganese nodules throughout; 1 percent gravel; neutral; clear smooth boundary.

2Bt3—24 to 30 inches; brown (7.5YR 4/3) clay loam; weak medium subangular blocky structure; firm; common fine roots; many prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; common medium prominent brownish yellow (10YR 6/6) and distinct strong brown (7.5YR 4/6) weakly cemented iron-manganese nodules throughout; 7 percent gravel; very slightly effervescent; slightly alkaline; clear smooth boundary.

3C—30 to 60 inches; yellowish brown (10YR 5/4) gravelly loamy sand; single grain; loose; 21 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 20 inches
Depth to sandy and gravelly deposits: 24 to 40 inches
Depth to carbonates: 24 to 40 inches
Depth to the base of soil development: 24 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—2 or 3
Texture—silt loam

E horizon (where present):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam or loam

BE, Bt, and/or 2Bt horizon (upper part):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam, clay loam, or loam
Content of gravel—less than 10 percent

Bt, BC, 2Bt, and/or 2BC horizon (lower part):
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 or 3
Texture—sandy loam, clay loam, loam, or sandy clay loam or the gravelly or very gravelly analogs of these textures
Content of gravel—less than 45 percent

2C and/or 3C horizon:
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—2 to 6
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand; stratified in most pedons
Content of gravel—20 to 75 percent
Content of cobbles—less than 10 percent

325A—Dresden silt loam, 0 to 2 percent slopes

Setting

Landform: Kames, stream terraces, and outwash plains
Position on the landform: Summits

Map Unit Composition

Dresden and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have sandy and gravelly deposits at a depth of less than 24 inches or more than 40 inches
- Soils that have slopes of more than 2 percent
- Soils that have a thicker surface layer

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Dresden Soil

Parent material: Loess and/or loamy outwash over sandy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2s
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

325B—Dresden silt loam, 2 to 4 percent slopes

Setting

Landform: Kames, outwash plains, and stream terraces
Position on the landform: Summits and backslopes

Map Unit Composition

Dresden and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have sandy and gravelly deposits at a depth of less than 24 inches or more than 40 inches
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that have a thicker surface layer

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Dresden Soil

Parent material: Loess and/or loamy outwash over sandy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Drummer Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Drummer silty clay loam, 0 to 2 percent slopes; at an elevation of 715 feet; 300 feet north and 1,600 feet east of the southwest corner of sec. 19, T. 19 N., R. 9 E.; Champaign County, Illinois; USGS Urbana topographic quadrangle; lat. 40 degrees 05 minutes 04 seconds N. and long. 88 degrees 13 minutes 58 seconds W., NAD 27; UTM Zone 16T, 0394895 easting and 4437861 northing, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; firm; many fine roots; moderately acid; clear smooth boundary.
A—7 to 14 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure parting to weak fine granular; firm; many fine and medium roots; slightly acid; clear smooth boundary.
BA—14 to 19 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate fine and medium subangular blocky structure; firm; many fine and medium roots; few fine faint very dark grayish brown (2.5Y 3/2) masses of oxidized iron and manganese in the matrix; slightly acid; gradual smooth boundary.
Bg—19 to 25 inches; dark gray (10YR 4/1) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; firm; many fine roots; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; many wormholes; neutral; gradual smooth boundary.
Btg1—25 to 32 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine and medium prismatic structure parting to moderate fine angular blocky; firm; many fine roots; common distinct dark gray (N 4/) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; neutral; gradual wavy boundary.
Btg2—32 to 41 inches; gray (N 5/) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few fine roots; few distinct dark gray (N 4/) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; neutral; clear wavy boundary.
2Btg3—41 to 47 inches; gray (N 5/) loam; weak coarse subangular blocky structure; friable; few fine roots; few distinct dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 4 percent gravel; neutral; abrupt wavy boundary.
2Cg—47 to 60 inches; dark gray (10YR 4/1), stratified loam and sandy loam; massive; friable; many medium prominent olive brown (2.5Y 4/4) masses of oxidized iron and manganese in the matrix; many medium distinct gray (N 5/) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: 40 to 65 inches
Depth to the base of soil development: 40 to 65 inches

Ap or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam or silt loam

BA horizon (where present), Bg horizon, and/or Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam

2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2

Texture—loam, clay loam, silt loam, or sandy loam
Content of gravel—less than 7 percent

2Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 7
Chroma—0 to 8
Texture—stratified loamy sand to silty clay loam
Content of gravel—less than 15 percent

152A—Drummer silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and outwash plains
Position on the landform: Toeslopes

Map Unit Composition

Drummer and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that are overlain by light-colored recent deposits
- Soils that have carbonates within a depth of 40 inches

Dissimilar soils:
- The somewhat poorly drained Barrington, Brenton, and Elburn soils on summits and footslopes
- Soils that are subject to flooding
- The poorly drained Harpster soils on toeslopes
- The very poorly drained Houghton soils on toeslopes

Properties and Qualities of the Drummer Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 7 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Du Page Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Du Page silt loam, 0 to 2 percent slopes, occasionally flooded; at an elevation of 598 feet; 1,875 feet south and 100 feet east of the northwest corner of sec. 10, T. 36 N., R. 9 E.; Will County, Illinois; USGS Plainfield topographic quadrangle; lat. 41 degrees 37 minutes 04 seconds N. and long. 88 degrees 12 minutes 08 seconds W., NAD 27; UTM Zone 16T, 0399840 easting and 4608038 northing, NAD 83:

A1—0 to 18 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many very fine roots; strongly effervescent; moderately alkaline; gradual smooth boundary.

A2—18 to 30 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine roots; a stratum of fine gravel 1 inch thick at a depth of 27 inches; strongly effervescent; moderately alkaline; gradual smooth boundary.

A3—30 to 35 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; weak medium granular structure; friable; few very fine roots; 3 percent fine gravel; strongly effervescent; moderately alkaline; clear smooth boundary.

C1—35 to 41 inches; brown (10YR 4/3) loam; massive; friable; many light gray (10YR 7/1) shell fragments; 7 percent fine and medium gravel; strongly effervescent; moderately alkaline; gradual smooth boundary.

C2—41 to 60 inches; dark gray (10YR 4/1) gravelly loam; massive; very friable; many light gray (10YR 7/1) shell fragments; 17 percent fine and medium gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 52 inches
Depth to carbonates: 10 inches or less
Thickness of the solum: 24 to 52 inches

Ap, A1, and/or A2 horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or loam

A3, AC, and/or Bw horizon:
Hue—10YR
Value—2 or 3
Chroma—2 or 3
Texture—loam, sandy loam, or sandy clay loam or the gravelly analogs of these textures
Content of gravel—less than 20 percent

C horizon:
Hue—10YR

Value—3 or 4
Chroma—1 to 4
Texture—stratified loam, silt loam, sandy loam, sandy clay loam, loamy sand, or sand or the gravelly analogs of these textures
Content of gravel—less than 25 percent

8321A—Du Page silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Du Page and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the upper and middle parts of the profile
- Soils that have carbonates within a depth of 10 inches
- Soils that do not have carbonates within a depth of 40 inches
- Soils that have a seasonal high water table at a depth of less than 3.5 feet

Dissimilar soils:
- Somewhat poorly drained soils in the slightly higher positions on flood plains
- The poorly drained Millington soils on flood plains

Properties and Qualities of the Du Page Soil

Parent material: Calcareous alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Low
Depth and months of highest apparent seasonal high water table: 3.5 to 6.0 feet, February through April
Ponding: None
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Elburn Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Elburn silt loam, 0 to 2 percent slopes; at an elevation of about 617 feet; 2,716 feet north and 1,300 feet west of the southeast corner of sec. 36, T. 14 N., R. 1 E.; Christian County, Illinois; USGS Assumption topographic quadrangle; lat. 39 degrees 37 minutes 04.7 seconds N. and long. 89 degrees 01 minute 45.8 seconds W., NAD 27; UTM Zone 16S, 0325797 easting and 4387329 northing, NAD 83:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

A—6 to 16 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—16 to 21 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; many distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron and few fine faint brown (10YR 5/3) masses of oxidized iron and manganese in the matrix; few fine iron-manganese concretions throughout; slightly acid; clear smooth boundary.

Bt2—21 to 28 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions and few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine iron-manganese concretions throughout; neutral; clear smooth boundary.

Bt3—28 to 36 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organo-clay films and dark gray (10YR 4/1) clay films on faces of peds; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine iron-manganese concretions throughout; neutral; clear smooth boundary.

Bt4—36 to 43 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; few prominent very dark gray (10YR 3/1) organo-clay films and few distinct brown (10YR 5/3) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) and brownish yellow (10YR 6/6) masses of oxidized iron in the matrix; few fine iron-manganese concretions throughout; slightly alkaline; clear smooth boundary.

Btg—43 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark gray (10YR 3/1) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; many medium prominent brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; few fine iron-manganese concretions throughout; slightly alkaline; clear smooth boundary.

2BCtg—49 to 58 inches; grayish brown (2.5Y 5/2), stratified silt loam, loam, and sandy loam; weak coarse subangular blocky structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films lining pores; common medium prominent

brownish yellow (10YR 6/8) and few fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; few very fine iron-manganese concretions throughout; slightly alkaline; clear smooth boundary.

2Cg—58 to 62 inches; grayish brown (2.5Y 5/2), stratified sandy loam and loamy sand; massive; very friable; common medium prominent yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) masses of oxidized iron in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 19 inches
Thickness of the loess: 40 to 60 inches
Depth to carbonates: More than 60 inches
Depth to the base of soil development: 40 to 70 inches

Ap and/or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt and/or Btg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam

2Bt, 2Btg, 2Bg, 2BC, 2BCt, 2BCtg, and/or 2BCg horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—stratified sandy loam, loam, or silt loam

2C or 2Cg horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—stratified sandy loam to loamy sand

198A—Elburn silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and footslopes

Map Unit Composition

Elburn and similar soils: 91 percent
Dissimilar soils: 9 percent

Soils of Minor Extent

Similar soils:
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have a thinner surface layer
- Soils that have till in the lower part of the profile
- Soils that have less sand and more silt in the lower part of the profile
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The well drained Plano soils on summits
- The poorly drained Drummer and Thorp soils on toeslopes

Properties and Qualities of the Elburn Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Elliott Series

Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon

Elliott silt loam, 0 to 2 percent slopes; at an elevation of 704 feet; 690 feet south and 2,436 feet west of the center of sec. 21, T. 29 N., R. 8 E.; Livingston County, Illinois; USGS Cullom topographic quadrangle; lat. 40 degrees 58 minutes 12 seconds N. and long. 88 degrees 19 minutes 19 seconds W., NAD 27; UTM Zone 16T, 0388762 easting and 4536262 northing, NAD 83:

Ap—0 to 6 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

A—6 to 11 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; common fine roots; slightly acid; clear smooth boundary.

Bt1—11 to 16 inches; light olive brown (2.5Y 5/4) silty clay; moderate fine subangular blocky structure; friable; common fine roots; few distinct black (10YR 2/1) organic coatings on faces of peds; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; neutral; clear smooth boundary.

2Bt2—16 to 23 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few

fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

2Bt3—23 to 28 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few fine roots; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 1 percent gravel; neutral; clear smooth boundary.

2Bt4—28 to 35 inches; olive brown (2.5Y 4/4) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; firm; few fine roots; many distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; few medium white (10YR 8/1) calcium carbonate concretions throughout; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 1 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Bt5—35 to 41 inches; olive brown (2.5Y 4/4) silty clay loam; weak fine prismatic structure parting to moderate medium angular blocky; firm; few fine roots; common distinct gray (5Y 6/1) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 2 percent gravel; strongly effervescent; slightly alkaline; clear smooth boundary.

2Cd—41 to 60 inches; olive brown (2.5Y 4/4) silty clay loam; massive; firm; common fine prominent gray (5Y 5/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: Less than 20 inches
Depth to carbonates: 17 to 40 inches
Depth to densic material: 20 to 45 inches
Depth to the base of soil development: 20 to 45 inches

Ap and/or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt and/or 2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay
Content of gravel—less than 10 percent

2Cd horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam
Content of gravel—less than 15 percent

146B—Elliott silt loam, 2 to 4 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and footslopes

Map Unit Composition

Elliott and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 4 percent
- Soils that are underlain by lacustrine deposits
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Elliott Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 20 to 45 inches to dense material
Available water capacity: About 8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Depth and months of highest perched seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Elpaso Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Elpaso silty clay loam, 0 to 2 percent slopes; at an elevation of 715 feet; 210 feet north and 320 feet west of the southeast corner of sec. 30, T. 27 N., R. 2 E.; Woodford County, Illinois; USGS Benson topographic quadrangle; lat. 40 degrees 45 minutes 59.7 seconds N. and long. 89 degrees 01 minute 34 seconds W., NAD 27; UTM Zone 16T, 0328989 easting and 4514825 northing, NAD 83:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak very fine granular structure; firm; many very fine and fine roots; moderately acid; abrupt smooth boundary.

A—7 to 21 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; firm; many very fine and fine roots; moderately acid; gradual wavy boundary.

Bg—21 to 35 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; many fine roots; many distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; few fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron in the matrix; neutral; gradual wavy boundary.

Btg1—35 to 44 inches; dark grayish brown (2.5Y 4/2) silty clay loam; moderate fine prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; common fine prominent yellowish brown (10YR 5/6) and few fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron in the matrix; neutral; gradual wavy boundary.

2Btg2—44 to 53 inches; dark grayish brown (2.5Y 4/2) silt loam; weak medium and coarse subangular blocky structure; friable; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; common medium prominent yellowish brown (10YR 5/6) and fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron in the matrix; 5 percent pebbles; slightly alkaline; clear wavy boundary.

2Btg3—53 to 69 inches; dark grayish brown (2.5Y 4/2) and olive brown (2.5Y 4/4) silty clay loam; weak medium and coarse prismatic structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; few fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine distinct olive gray (5Y 5/2) iron depletions throughout; 4 percent pebbles; slightly effervescent starting at a depth of 63 inches; slightly alkaline; diffuse wavy boundary.

2C—69 to 80 inches; olive brown (2.5Y 4/4) silty clay loam; massive; firm; few fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; many medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine distinct olive gray (5Y 5/2) iron depletions throughout; 4 percent pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: 35 to 65 inches
Depth to the base of soil development: 45 to 75 inches

Ap and/or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam

Bg and/or Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam

2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6

Chroma—0 to 4
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—1 to 10 percent

2C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—1 to 10 percent

356A—Elpaso silty clay loam, 0 to 2 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Elpaso and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have till at a depth of less than 40 inches or more than 60 inches
- Soils that are overlain by light-colored recent deposits
- Soils that have more clay and less silt in the control section
- Soils that have outwash in the lower part of the profile
- Soils that have carbonates within a depth of 35 inches

Dissimilar soils:
- The somewhat poorly drained Chenoa and Flanagan soils on summits and footslopes
- The poorly drained, calcareous Harpster soils on toeslopes

Properties and Qualities of the Elpaso Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 7 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Flanagan Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon

Flanagan silt loam, 0 to 2 percent slopes; at an elevation of 730 feet; 1,607 feet east and 1,405 feet north of the southwest corner of sec. 19, T. 19 N., R. 9 E.; Champaign County, Illinois; USGS Urbana topographic quadrangle; lat. 40 degrees 05 minutes 14 seconds N. and long. 88 degrees 13 minutes 57 seconds W., NAD 27; UTM Zone 16T, 0394923 easting and 4438169 northing, NAD 83:

A1—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; slightly alkaline; gradual smooth boundary.

A2—8 to 15 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; slightly acid; clear smooth boundary.

A3—15 to 18 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; slightly acid; clear smooth boundary.

Bt1—18 to 23 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine faint brown (10YR 4/3) masses of oxidized iron and manganese in the matrix; moderately acid; clear smooth boundary.

Bt2—23 to 32 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate medium subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine faint brown (10YR 5/3 and 4/3) masses of oxidized iron and manganese in the matrix; moderately acid; clear smooth boundary.

Bt3—32 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine faint light yellowish brown (10YR 6/4) and distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

Bt4—38 to 45 inches; 40 percent yellowish brown (10YR 5/6), 30 percent light brownish gray (10YR 6/2), and 30 percent brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; slightly acid; gradual smooth boundary.

2Bt5—45 to 49 inches; 35 percent yellowish brown (10YR 5/4), 35 percent light olive brown (2.5Y 5/4), and 30 percent light brownish gray (10YR 6/2) silt loam; weak coarse subangular blocky structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; 5 percent gravel; neutral; abrupt smooth boundary.

2C—49 to 60 inches; yellowish brown (10YR 5/4) loam; massive; firm; common medium white (10YR 8/1) weakly cemented calcium carbonate nodules

throughout; common fine and medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: 45 to 65 inches
Depth to the base of soil development: 45 to 65 inches

Ap and/or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam

2Bt, 2Btg, 2BCg, and/or 2BC horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam or loam
Content of gravel—1 to 14 percent

2C horizon:
Hue—7.5YR to 5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam
Content of gravel—1 to 14 percent

154A—Flanagan silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Map Unit Composition

Flanagan and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that have more clay and less sand in the middle and lower parts of the profile
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have outwash in the lower part of the profile
- Soils that have slopes of more than 2 percent
- Soils that have till within a depth of 40 inches

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Flanagan Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 5.0 percent
Shrink-swell potential: High
Depth and months of highest perched seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Fox Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Fox silt loam, 2 to 4 percent slopes; at an elevation of 602 feet; 760 feet north and 2,120 feet east of the southwest corner of sec. 21, T. 36 N., R. 9 E.; Will County, Illinois; USGS Plainfield topographic quadrangle; lat. 41 degrees 34 minutes 54 seconds N. and long. 88 degrees 12 minutes 46 seconds W., NAD 27; UTM Zone 16T, 0398897 easting and 4604044 northing, NAD 83:

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; common fine roots; neutral; clear smooth boundary.

BE—4 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots; few prominent light brownish gray (10YR 6/2) (dry) silt coatings on horizontal faces of peds; neutral; gradual smooth boundary.

Bt1—7 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; common faint brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2Bt2—13 to 24 inches; brown (7.5YR 4/3) clay loam; moderate medium and coarse subangular blocky structure; firm; common fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; common fine yellowish brown (10YR 5/6) weakly cemented iron-manganese concretions throughout; 7 percent gravel; very slightly effervescent; slightly alkaline; gradual wavy boundary.

2BCt—24 to 28 inches; dark yellowish brown (10YR 4/4) gravelly loam; weak medium and coarse subangular blocky structure; firm; few distinct brown (10YR 4/3) clay films on vertical faces of peds; common fine yellowish brown (10YR 5/8) weakly cemented iron-manganese concretions throughout; 15 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

3C—28 to 60 inches; 80 percent brownish yellow (10YR 6/6) and 20 percent yellowish brown (10YR 5/4) gravelly coarse sand; single grain; loose; 20 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 24 inches
Depth to sandy and gravelly deposits: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Depth to the base of soil development: 20 to 40 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—1 to 3
Texture—silt loam

E or BE horizon (where present):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—5YR, 7.5YR, or 10YR
Value—3 or 4
Chroma—3 or 4
Texture—clay loam, loam, sandy clay loam, or sandy loam or the gravelly analogs of these textures
Content of gravel—less than 35 percent

3C horizon:
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—3 or 4
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand or coarse sand; stratified in most pedons
Content of gravel—15 to 70 percent
Content of cobbles—less than 10 percent

327B—Fox silt loam, 2 to 4 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Backslopes and summits

Map Unit Composition

Fox and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker and darker surface layer
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have sandy and gravelly deposits at a depth of less than 24 inches or more than 40 inches
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that are moderately eroded

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Fox Soil

Parent material: Loess and/or loamy outwash over sandy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

327C2—Fox silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Backslopes and shoulders

Map Unit Composition

Fox and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the upper one-half of the profile
- Soils that have sandy and gravelly deposits at a depth of less than 24 inches or more than 40 inches
- Soils that have slopes of less than 4 percent or more than 6 percent

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes
- Soils that are severely eroded

Properties and Qualities of the Fox Soil

Parent material: Loess and/or loamy outwash over sandy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Graymont Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Graymont soils in map units 541B2 and 541C2 have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs.

Typical Pedon

Graymont silt loam, 2 to 5 percent slopes; at an elevation of 704 feet; 2,100 feet north and 100 feet east of the southwest corner of sec. 28, T. 28 N., R. 3 E.; Livingston County, Illinois; USGS Flanagan Southwest topographic quadrangle; lat. 40 degrees 51 minutes 41 seconds N. and long. 88 degrees 53 minutes 30 seconds W., NAD 27; UTM Zone 16T, 0340565 easting and 4525111 northing, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.

AB—7 to 12 inches; very dark brown (10YR 2/2) silt loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate fine granular; friable; few very fine roots; slightly acid; clear smooth boundary.

Bt1—12 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine angular blocky structure; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—19 to 24 inches; yellowish brown (10YR 5/4 and 5/6) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—24 to 28 inches; yellowish brown (10YR 5/4 and 5/6) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; common fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Bt4—28 to 33 inches; brown (10YR 5/3) silt loam; weak fine prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; few distinct grayish brown (10YR 5/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint light brownish gray (10YR 6/2) iron depletions in the matrix; neutral; clear smooth boundary.

2Btg—33 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine prismatic structure; firm; few very fine roots; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; common fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron in the matrix; 3 percent gravel; neutral; clear smooth boundary.

2Cg—38 to 60 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; few fine black (7.5YR 2.5/1) very weakly cemented iron-manganese concretions throughout; few fine white (10YR 8/1) very weakly cemented calcium carbonate concretions throughout; few fine prominent light olive brown (2.5Y 5/6) masses of oxidized iron in the matrix; few fine faint light brownish gray (2.5Y 6/2) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the dark surface layer: 7 to 20 inches
Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: 24 to 40 inches
Depth to the base of soil development: 24 to 45 inches

Ap and/or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of gravel—1 to 10 percent

2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam
Content of gravel—2 to 15 percent

541A—Graymont silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits

Map Unit Composition

Graymont and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have till at a depth of less than 20 inches or more than 40 inches
- Soils that have more sand and less silt in the upper one-half of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have more clay and less silt in the control section

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Graymont Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

541B—Graymont silt loam, 2 to 5 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and summits

Map Unit Composition

Graymont and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have till at a depth of less than 20 inches or more than 40 inches
- Soils that have more sand and less silt in the upper one-half of the profile
- Soils that are moderately eroded
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have more clay and less silt in the control section

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Graymont Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

541B2—Graymont silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Summits and backslopes

Map Unit Composition

Graymont and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have till at a depth of less than 20 inches or more than 40 inches
- Soils that have more sand and less silt in the upper one-half of the profile
- Soils that are slightly eroded
- Soils that have more clay and less silt in the control section
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Graymont Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

541C2—Graymont silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Graymont and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have till at a depth of less than 20 inches or more than 40 inches
- Soils that have more sand and less silt in the upper one-half of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have more clay and less silt in the control section

Dissimilar soils:
- The nearly level, somewhat poorly drained Chenoa soils on summits and footslopes
- The poorly drained Elpaso soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Graymont Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Harpster Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Calciaquolls

Typical Pedon

Harpster silty clay loam, 0 to 2 percent slopes; at an elevation of 722 feet; 855 feet south and 70 feet west of the northeast corner of sec. 20, T. 23 N., R. 7 E.; Ford County, Illinois; USGS Gibson City West topographic quadrangle; lat. 40 degrees 26 minutes 24 seconds N. and long. 88 degrees 25 minutes 23 seconds W., NAD 27; UTM Zone 16T, 0379305 easting and 4477570 northing, NAD 83:

Apk—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; many snail shells; strongly effervescent (20 percent calcium carbonate equivalent); moderately alkaline; abrupt smooth boundary.

Ak—9 to 18 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak fine and medium granular structure; firm; common very fine roots; many snail shells; strongly effervescent (18 percent calcium carbonate equivalent); moderately alkaline; clear smooth boundary.

Bg1—18 to 25 inches; dark grayish brown (2.5Y 4/2) silty clay loam; weak fine and medium angular blocky structure; firm; common very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common fine distinct light olive brown (2.5Y 5/4) masses of oxidized iron in the matrix; few snail shells; slightly effervescent (7 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.

Bg2—25 to 31 inches; dark gray (5Y 4/1) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular blocky; firm; few very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine prominent dark yellowish brown (10YR 4/4) and few fine distinct olive (5Y 4/4) extremely weakly cemented iron-manganese accumulations in the matrix; few snail shells; slightly effervescent (5 percent calcium carbonate equivalent); slightly alkaline; gradual smooth boundary.

Bg3—31 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak coarse prismatic structure parting to weak medium angular blocky; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; common medium distinct olive (5Y 4/4) extremely weakly cemented iron-manganese accumulations and few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 2 percent gravel; slightly effervescent (2 percent calcium carbonate equivalent); slightly alkaline; gradual smooth boundary.

Bg4—36 to 41 inches; 40 percent olive brown (2.5Y 4/4), 35 percent olive yellow (2.5Y 6/6), and 25 percent gray (5Y 5/1) silty clay loam; weak coarse angular blocky structure; firm; few very fine roots; 2 percent gravel; slightly effervescent (2 percent calcium carbonate equivalent); slightly alkaline; gradual smooth boundary.

Cg1—41 to 56 inches; 55 percent gray (5Y 5/1), 40 percent light olive brown (2.5Y 5/6), and 5 percent dark yellowish brown (10YR 4/4) silt loam; massive; firm; 1 percent gravel; strongly effervescent (16 percent calcium carbonate equivalent); moderately alkaline; clear smooth boundary.

Cg2—56 to 60 inches; gray (10YR 5/1) loam; massive; friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess or other silty material: 36 to 60 inches
Depth to carbonates: Less than 16 inches
Depth to the base of soil development: 22 to 46 inches

Apk and/or Ak horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 or 1
Texture—silty clay loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam
Content of gravel—less than 3 percent

Cg or 2Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—silt loam or loam
Content of gravel—less than 7 percent

67A—Harpster silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains, ground moraines, lake plains, stream terraces, and depressions
Position on the landform: Toeslopes

Map Unit Composition

Harpster and similar soils: 97 percent
Dissimilar soils: 3 percent

Soils of Minor Extent

Similar soils:
- Soils that have till in the lower part of the profile
- Soils that have a surface layer of silt loam
- Soils that are overlain by light-colored recent deposits
- Soils that do not have carbonates in the surface layer

Dissimilar soils:
- The very poorly drained Houghton soils on toeslopes

Properties and Qualities of the Harpster Soil

Parent material: Calcareous fine-silty colluvium over glacial drift
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.5 to 6.0 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Hennepin Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Eutrudepts

Typical Pedon

Hennepin loam, in an area of Hennepin-Casco complex, 30 to 60 percent slopes; at an elevation of 670 feet; 2,400 feet south and 2,010 feet east of the northwest corner of sec. 28, T. 17 N., R. 9 E.; Bureau County, Illinois; USGS Princeton North topographic quadrangle; lat. 41 degrees 24 minutes 48 seconds N. and long. 89 degrees 27 minutes 51 seconds W.; UTM Zone 16T, 0294114 easting and 4589432 northing, NAD 83:

A—0 to 5 inches; very dark grayish brown (10YR 3/2) loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many medium roots; 5 percent gravel; neutral; abrupt smooth boundary.

Bw—5 to 10 inches; yellowish brown (10YR 5/4) loam; moderate fine subangular blocky structure; friable; many medium roots; common medium very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 8 percent gravel; neutral; clear smooth boundary.

BC—10 to 16 inches; brown (7.5YR 5/4) loam; weak fine subangular blocky structure; friable; many medium roots; 10 percent gravel; violently effervescent; slightly alkaline; clear smooth boundary.

C—16 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; 14 percent gravel; violently effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: Less than 15 inches
Depth to the base of soil development: 10 to 20 inches

A or Ap horizon:
Hue—10YR or 7.5YR
Value—3 to 5
Chroma—1 to 4
Texture—loam
Content of gravel—less than 10 percent

Bw horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture—loam, silt loam, or clay loam
Content of gravel—less than 15 percent

C horizon:
Hue—2.5Y, 10YR, or 7.5YR
Value—5 or 6
Chroma—2 to 4
Texture—loam, silt loam, or clay loam
Content of gravel—less than 15 percent

820E—Hennepin-Casco complex, 12 to 30 percent slopes

Setting

Landform: Ground moraines, end moraines, and stream terraces
Position on the landform: Backslopes

Map Unit Composition

Hennepin and similar soils: 50 percent
Casco and similar soils: 35 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have till or gravelly outwash at a depth of more than 20 inches
- Soils that have slopes of less than 12 percent or more than 30 percent
- Soils that are moderately eroded
- Soils that have carbonates at a depth of more than 20 inches

Dissimilar soils:
- Severely eroded soils on shoulders and backslopes
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Hennepin Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Casco Soil

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hennepin—6e; Casco—6e
Prime farmland category: Not prime farmland
Hydric soil status: Hennepin—not hydric; Casco—not hydric

820G—Hennepin-Casco complex, 30 to 60 percent slopes

Setting

Landform: Stream terraces, ground moraines, and end moraines
Position on the landform: Backslopes

Map Unit Composition

Hennepin and similar soils: 50 percent
Casco and similar soils: 35 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have carbonates at a depth of more than 20 inches
- Soils that are moderately eroded
- Soils that have till or gravelly outwash at a depth of more than 20 inches
- Soils that have slopes of less than 30 percent or more than 60 percent

Dissimilar soils:
- Severely eroded soils on shoulders and backslopes
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Hennepin Soil

Parent material: Till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Casco Soil

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Hennepin—7e; Casco—7e
Prime farmland category: Not prime farmland
Hydric soil status: Hennepin—not hydric; Casco—not hydric

Houghton Series

Taxonomic classification: Euic, mesic Typic Haplosaprists

Typical Pedon

Houghton muck, 0 to 2 percent slopes; at an elevation of 960 feet; 465 feet south and 1,248 feet west of the northeast corner of sec. 5, T. 45 N., R. 6 E.; McHenry County, Illinois; USGS Harvard topographic quadrangle; lat. 42 degrees 24 minutes 48 seconds N. and long. 88 degrees 33 minutes 18 seconds W., NAD 27; UTM Zone 16T, 0372046 easting and 4696843 northing, NAD 83:

Oap—0 to 11 inches; muck (sapric material), black (N 2.5/) broken face and rubbed, black (5Y 2.5/1) dry; about 10 percent fiber, 1 percent rubbed; moderate fine subangular blocky structure; very friable; common very fine roots; neutral; abrupt smooth boundary.

Oa1—11 to 26 inches; muck (sapric material), 95 percent black (N 2.5/) and 5 percent dark reddish brown (5YR 3/3) broken face and rubbed; about 10 percent fiber, 1 percent rubbed; moderate fine and medium subangular blocky structure; very friable; common very fine roots; neutral; clear wavy boundary.

Oa2—26 to 44 inches; muck (sapric material), black (N 2.5/) broken face and rubbed; about 10 percent fiber, 1 percent rubbed; weak fine subangular blocky structure; very friable; common very fine roots; slightly acid; clear wavy boundary.

Oa3—44 to 60 inches; 95 percent muck (sapric material), black (N 2.5/) broken face and rubbed; 5 percent light brownish gray (2.5Y 6/2) very fine sandy loam; about 10 percent fiber, 1 percent rubbed; massive; very friable; common very fine roots; slightly acid.

Range in Characteristics

Thickness of the organic deposits: More than 51 inches

Surface tier:
Hue—10YR or N
Value—2 to 3
Chroma—0 or 1
Texture—muck (sapric material)

Subsurface tier:
Hue—7.5YR, 10YR, or N
Value—2 to 3
Chroma—0 to 2
Texture—muck (sapric material)

103A—Houghton muck, 0 to 2 percent slopes

Setting

Landform: Ground moraines, end moraines, and outwash plains
Position on the landform: Toeslopes

Map Unit Composition

Houghton and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have organic deposits less than 51 inches thick
- Soils that have thin overwash of silt loam
- Soils in which the surface layer contains less organic matter

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes
- The very poorly drained, calcareous Lena soils on toeslopes

Properties and Qualities of the Houghton Soil

Parent material: Herbaceous organic material
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow to moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 23.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 70 to 99 percent
Shrink-swell potential: Not rated
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, November through June
Depth and months of deepest ponding: 0 to 1 foot above the surface, November through June
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

Kaneville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs

Typical Pedon

Kaneville silt loam, 0 to 2 percent slopes; at an elevation of 765 feet; 1,400 feet north and 80 feet west of the southeast corner of sec. 34, T. 39 N., R. 6 E.; Kane County, Illinois; USGS Big Rock topographic quadrangle; lat. 41 degrees 48 minutes 42 seconds N. and long. 88 degrees 31 minutes 43 seconds W., NAD 27; UTM Zone 16T, 0373033 easting and 4629994 northing, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common very fine roots; neutral; abrupt smooth boundary.

Bt1—8 to 12 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak medium subangular blocky structure; friable; common very fine roots; common faint brown (10YR 4/3) clay films on faces of peds and in pores; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; clear wavy boundary.

Bt2—12 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common faint brown (10YR 4/3) clay films on faces of peds and in pores; few distinct very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; clear wavy boundary.

Bt3—19 to 26 inches; brown (10YR 4/3) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; friable; common very fine roots; common faint brown (10YR 4/3) clay films on faces of peds and in pores; few distinct very dark gray (10YR 3/1) organic coatings in root channels and in pores; common fine rounded black (7.5YR 2.5/1) iron-manganese concretions throughout; common fine faint light brownish gray (10YR 6/2) and brown (10YR 5/3) iron depletions in the matrix; slightly acid; clear wavy boundary.

Bt4—26 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; common fine rounded black (7.5YR 2.5/1) iron-manganese concretions throughout; common fine yellowish brown (10YR 5/6) very weakly cemented iron concretions throughout; common medium distinct light brownish gray (2.5Y 6/2) and common medium faint brown (10YR 5/3) iron depletions in the matrix; neutral; gradual wavy boundary.

Bt5—34 to 42 inches; yellowish brown (10YR 5/4) silt loam; weak medium and coarse subangular blocky structure; friable; common very fine roots; few faint brown (10YR 4/3) clay films on faces of peds; common fine rounded black (7.5YR 2.5/1) iron-manganese concretions throughout; common fine yellowish brown (10YR 5/6) very weakly cemented iron concretions throughout; many coarse distinct light brownish gray (10YR 6/2) and common coarse faint brown (10YR 5/3) iron depletions in the matrix; neutral; clear wavy boundary.

2Bt6—42 to 56 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; friable; common very fine roots; few faint brown (10YR 5/3) clay films on faces of peds; common coarse distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent gravel; strongly effervescent; slightly alkaline; gradual wavy boundary.

2C—56 to 80 inches; light olive brown (2.5Y 5/4) sandy loam; massive; very friable; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—loam, clay loam, silt loam, or sandy loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loam, silt loam, sandy loam, loamy sand, sandy clay loam, or clay loam; stratified in most pedons
Content of gravel—less than 15 percent

667A—Kaneville silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits

Map Unit Composition

Kaneville and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker surface layer
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Kaneville Soil

Parent material: Loess and the underlying outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

667B—Kaneville silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Kaneville and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker surface layer
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 2 percent or more than 5 percent

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Kaneville Soil

Parent material: Loess and the underlying outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Kendall Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon

Kendall silt loam, 0 to 2 percent slopes; at an elevation of 650 feet; 1,160 feet north and 400 feet west of the center of sec. 36, T. 15 N., R. 10 E.; Douglas County, Illinois; USGS Oakland topographic quadrangle; lat. 39 degrees 42 minutes 24 seconds N. and long. 88 degrees 02 minutes 17 seconds W., NAD 27; UTM Zone 16S, 0411010 easting and 4395720 northing, NAD 83:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; many very fine and fine roots; few fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; neutral; abrupt smooth boundary.

E—7 to 11 inches; grayish brown (10YR 5/2) silt loam; moderate fine and medium granular structure; friable; many very fine and fine roots; common fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; slightly acid; clear smooth boundary.

BE—11 to 14 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; many very fine and fine roots; common fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; slightly acid; clear smooth boundary.

Btg1—14 to 25 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine and medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few very fine and fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; common fine faint brown (10YR 5/3) masses of oxidized iron and manganese in the matrix; strongly acid; clear smooth boundary.

Btg2—25 to 41 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium and coarse subangular blocky; firm; few very fine and fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; common medium prominent

yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.

Btg3—41 to 51 inches; 55 percent yellowish brown (10YR 5/6) and 45 percent gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak coarse subangular blocky; firm; few very fine and fine roots; common distinct gray (10YR 5/1) clay films on faces of peds; few medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; slightly acid; clear smooth boundary.

2Btg4—51 to 58 inches; 40 percent strong brown (7.5YR 5/6), 30 percent yellowish brown (10YR 5/6), and 30 percent gray (5Y 5/1) loam; weak coarse subangular blocky structure; friable; few distinct discontinuous dark gray (10YR 4/1) clay films on faces of peds; common fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; about 5 percent fine gravel; neutral; clear smooth boundary.

2Cg—58 to 74 inches; 45 percent yellowish brown (10YR 5/6), 45 percent gray (5Y 5/1), and 10 percent strong brown (7.5YR 5/6), stratified loam, sandy loam, and silt loam; massive; friable; about 5 percent fine gravel; slightly alkaline.

Range in Characteristics

Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to more than 60 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam

E and/or BE horizon:
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt and/or Btg horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam

2Bt and/or 2Btg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—loam
Content of gravel—less than 15 percent

2C or 2Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—stratified loam, silt loam, or sandy loam
Content of gravel—less than 15 percent

242A—Kendall silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and footslopes

Map Unit Composition

Kendall and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker and darker surface layer
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Kendall Soil

Parent material: Loess over outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Knight Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon

Knight silt loam, 0 to 2 percent slopes; at an elevation of 530 feet; 330 feet north and 2,170 feet east of the southwest corner of sec. 9, T. 20 N., R. 1 W.; Logan County, Illinois; USGS Waynesville West topographic quadrangle; lat. 40 degrees 11 minutes 39 seconds N. and long. 89 degrees 12 minutes 53 seconds W., NAD 27; UTM Zone 16T, 0311490 easting and 4451657 northing, NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) silt loam; moderate very fine subangular blocky structure (compacted); friable; few fine roots; neutral; abrupt smooth boundary.

Eg—10 to 16 inches; gray (10YR 5/1) silt loam; moderate medium platy structure; friable; few fine roots; few distinct dark grayish brown (10YR 4/2) organic stains on faces of peds; few fine distinct dark brown (7.5YR 3/4) extremely weakly cemented iron-manganese accumulations in the matrix; neutral; clear smooth boundary.

BEg—16 to 22 inches; light brownish gray (2.5Y 6/2) silt loam; moderate thick platy structure parting to moderate fine subangular blocky; friable; few fine roots; few distinct dark grayish brown (10YR 4/2) organic stains on faces of peds; few fine prominent dark brown (7.5YR 3/4) extremely weakly cemented iron-manganese accumulations in the matrix; neutral; gradual smooth boundary.

Btg1—22 to 35 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few faint gray (2.5Y 6/1) silt coatings on faces of peds; common distinct grayish brown (10YR 5/2) clay films on faces of peds and few distinct dark grayish brown (10YR 4/2) clay films on surfaces along pores; few fine distinct black (7.5YR 2.5/1) iron-manganese concretions and few fine prominent strong brown (7.5YR 4/6) masses of oxidized iron in the matrix; slightly acid; gradual smooth boundary.

Btg2—35 to 53 inches; variegated strong brown (7.5YR 5/6 and 4/6) and light brownish gray (2.5Y 6/2) silty clay loam; weak coarse prismatic structure; friable; few faint gray (2.5Y 6/1) silt coatings on faces of peds; few distinct grayish brown (10YR 5/2) clay films on faces of peds and few distinct dark grayish brown (10YR 4/2) clay films on surfaces along pores; few fine distinct black (7.5YR 2.5/1) iron-manganese concretions in the matrix; slightly acid; gradual smooth boundary.

BCg—53 to 70 inches; variegated light brownish gray (2.5Y 6/2) and strong brown (7.5YR 5/6 and 4/6) silt loam; weak coarse prismatic structure; friable; few distinct dark grayish brown (10YR 4/2) clay films on surfaces along pores; few fine distinct black (7.5YR 2.5/1) iron-manganese concretions and few fine distinct strong brown (7.5YR 4/6) masses of oxidized iron in the matrix; neutral; abrupt smooth boundary.

2Cg1—70 to 79 inches; grayish brown (10YR 5/2), stratified sandy clay loam and sandy loam; massive; friable; few fine prominent strong brown (7.5YR 4/6) masses of oxidized iron and few fine distinct black (7.5YR 2.5/1) iron-manganese concretions in the matrix; 5 percent gravel; neutral; gradual smooth boundary.

2Cg2—79 to 88 inches; dark grayish brown (10YR 4/2) gravelly sandy clay loam; massive; friable; few fine distinct black (7.5YR 2.5/1) manganese concretions and few fine prominent strong brown (7.5YR 4/6) masses of oxidized iron in the matrix; 15 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess or other silty material: More than 54 inches
Depth to the base of the argillic horizon: 45 to 60 inches
Depth to carbonates: More than 54 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Eg and/or BEg horizons
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Btg and/or BCg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silt loam

2C or 2Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—stratified sandy clay loam, sandy loam, loam, or clay loam or the gravelly or very gravelly analogs of these textures
Content of gravel—0 to 60 percent

191A—Knight silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Toeslopes

Map Unit Composition

Knight and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thinner surface layer
- Soils that have more sand and less silt within a depth of 54 inches

Properties and Qualities of the Knight Soil

Parent material: Loess or other silty material over outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

La Rose Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Argiudolls
Taxadjunct features: The La Rose soils in map units 60B2 and 60C2 have redoximorphic features above a depth of 40 inches. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-loamy, mixed, active, mesic Oxyaquic Argiudolls. The La Rose soil in map unit 60C3 has redoximorphic features above a depth of 40 inches and has a thinner dark surface layer than is defined as the range for the series. These differences, however, do not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, active, mesic Oxyaquic Hapludalf.

Typical Pedon

La Rose silt loam, 5 to 10 percent slopes, eroded; at an elevation of 870 feet; 2,342 feet north and 114 feet east of the southwest corner of sec. 33, T. 38 N., R. 2 E.; Lee County, Illinois; USGS Compton topographic quadrangle; lat. 41 degrees 43 minutes 22.6 seconds N. and long. 89 degrees 01 minute 07 seconds W., NAD 27; UTM Zone 16T, 0332089 easting and 4621001 northing, NAD 83:

Ap—0 to 7 inches; 95 percent very dark grayish brown (10YR 3/2) and 5 percent brown (7.5YR 4/4) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few fine roots; 1 percent pebbles; neutral; abrupt smooth boundary.

Bt1—7 to 14 inches; brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; few fine roots; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; common prominent very dark grayish brown (10YR 3/2) organo-clay films lining pores and root channels; 3 percent pebbles; neutral; clear smooth boundary.

Bt2—14 to 19 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct dark brown (10YR 3/3) organo-clay films on faces of peds; common prominent very dark grayish brown (10YR 3/2) organo-clay films lining pores and root channels; 3 percent pebbles; neutral; clear smooth boundary.

C1—19 to 42 inches; brown (7.5YR 5/4) loam; massive; firm; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; 4 percent pebbles; strongly effervescent; slightly alkaline; gradual smooth boundary.

C2—42 to 60 inches; brown (7.5YR 5/4) loam; massive; firm; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; 4 percent pebbles; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the dark surface layer: 7 to 12 inches
Depth to carbonates: 10 to 24 inches
Depth to the base of soil development: 12 to 24 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3

Chroma—1 to 3
Texture—silt loam, silty clay loam, or clay loam

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam or silty clay loam
Content of gravel—less than 7 percent

C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 or 4
Texture—loam or silt loam
Content of gravel—2 to 10 percent

60B2—La Rose silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and summits

Map Unit Composition

La Rose and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have till at a depth of more than 24 inches
- Soils that have till of silty clay loam instead of loam
- Soils that have slopes of more than 5 percent
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have more clay and less sand throughout the profile

Dissimilar soils:
- Moderately well drained, calcareous soils on backslopes
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the La Rose Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

60C2—La Rose silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

La Rose and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silty clay loam instead of loam
- Soils that have till at a depth of more than 24 inches
- Soils that have more clay and less sand throughout the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 5 percent or more than 10 percent

Dissimilar soils:
- The somewhat poorly drained Lisbon soils on nearly level footslopes
- Moderately well drained, calcareous soils on backslopes
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the La Rose Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High

Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

60C3—La Rose clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

La Rose and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have till of silty clay loam instead of loam
- Soils that have more clay and less sand throughout the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 5 percent or more than 10 percent

Dissimilar soils:
- The somewhat poorly drained Lisbon soils on nearly level footslopes
- Moderately well drained, calcareous soils on backslopes
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the La Rose Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 6.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Landes Series

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Fluventic Hapludolls

Typical Pedon

Landes fine sandy loam, 0 to 2 percent slopes, frequently flooded; at an elevation of 440 feet; 99 feet south and 990 feet west of the northeast corner of sec. 4, T. 18 N., R. 11 W.; Cass County, Illinois; USGS Clearlake topographic quadrangle; lat. 40 degrees 02 minutes 51 seconds N. and long. 90 degrees 19 minutes 58 seconds W., NAD 27; UTM Zone 15T, 0727519 easting and 4436443 northing, NAD 83:

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) fine sandy loam, brown (10YR 4/3) dry; weak fine subangular blocky structure parting to weak fine granular; friable; few very fine roots; few fine very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; abrupt smooth boundary.

A—5 to 14 inches; very dark grayish brown (10YR 3/2) fine sandy loam, brown (10YR 5/3) dry; weak medium subangular blocky structure; friable; few very fine roots; neutral; clear smooth boundary.

AB—14 to 19 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; friable; few very fine roots; many faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

Bw1—19 to 23 inches; brown (10YR 4/3) loam; weak fine and medium subangular blocky structure; friable; few very fine roots; many faint dark brown (10YR 3/3) and few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

Bw2—23 to 28 inches; brown (10YR 4/3) fine sandy loam; weak medium subangular blocky structure; friable; few very fine roots; common faint dark brown (10YR 3/3) organic coatings on faces of peds; less than 2 percent fine gravel; neutral; clear smooth boundary.

Bw3—28 to 32 inches; brown (10YR 4/3) and dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; very friable; few very fine roots; common faint dark brown (10YR 3/3) organic coatings on faces of peds; less than 2 percent fine gravel; neutral; clear smooth boundary.

BC—32 to 36 inches; dark yellowish brown (10YR 4/4) and brown (10YR 4/3) loamy sand; weak medium subangular blocky structure; very friable; few very fine roots; 5 percent fine gravel; neutral; clear smooth boundary.

C—36 to 60 inches; yellowish brown (10YR 5/4) sand; single grain; loose; 2 percent fine gravel; neutral.

Range in Characteristics

Depth to carbonates: More than 40 inches
Depth to the base of soil development: 22 to 40 inches

Ap, A, and/or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3

Texture—fine sandy loam
Content of gravel—0 to 10 percent

Bw horizon:
Hue—10YR
Value—3 to 6
Chroma—2 to 4
Texture—loam, fine sandy loam, very fine sandy loam, sandy loam, loamy fine sand, or loamy very fine sand
Content of gravel—0 to 10 percent

BC and/or C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—1 to 4
Texture—sand, fine sand, loamy sand, loamy fine sand, sandy loam, or fine sandy loam
Content of gravel—0 to 10 percent

8304A—Landes fine sandy loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains and natural levees

Map Unit Composition

Landes and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the upper and middle parts of the profile
- Soils that have less sand and more clay in the upper and middle parts of the profile
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- Somewhat poorly drained soils in the slightly lower positions on flood plains

Properties and Qualities of the Landes Soil

Parent material: Loamy alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Low
Ponding: None
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Lena Series

Taxonomic classification: Euic, mesic Typic Haplosaprists

Typical Pedon

Lena muck, 0 to 2 percent slopes; at an elevation of 568 feet; 210 feet south and 27 feet east of the center of sec. 4, T. 36 N., R. 6 E.; Kendall County, Illinois; USGS Newark topographic quadrangle; lat. 41 degrees 37 minutes 25 seconds N. and long. 88 degrees 33 minutes 17 seconds W., NAD 27; UTM Zone 16T, 0370478 easting and 4609158 northing, NAD 83:

Oa1—0 to 10 inches; muck (sapric material), black (N 2.5/) broken face and rubbed; about 5 percent fibers, a trace when rubbed; weak medium subangular blocky structure; friable; 2 to 3 percent mineral material; common snail shells and snail-shell fragments; violently effervescent; moderately alkaline; clear smooth boundary.

Oa2—10 to 24 inches; muck (sapric material), black (N 2.5/) broken face and rubbed; about 15 percent fibers, less than 5 percent rubbed; weak coarse subangular blocky structure; friable; about 3 percent mineral material; common snail shells and snail-shell fragments; violently effervescent; moderately alkaline; diffuse smooth boundary.

Oa3—24 to 68 inches; muck (sapric material), black (N 2.5/) broken face and rubbed; about 15 percent fibers in the upper part and 20 percent in the lower part; weak coarse subangular blocky structure in the upper part, massive in the lower part; friable; about 2 percent mineral material; a few woody fragments in the lower part; common snail shells and snail-shell fragments; violently effervescent; moderately alkaline; gradual smooth boundary.

Oe—68 to 82 inches; mucky peat (hemic material), black (N 2.5/) and dark brown (7.5YR 3/2) broken face and black (N 2.5/) rubbed; about 30 to 65 percent fibers; massive; less than 1 percent mineral material; few snail shells; slightly effervescent; slightly alkaline; gradual smooth boundary.

O´a—82 to 104 inches; muck (sapric material), black (N 2.5/) broken face and very dark gray (5Y 3/1) rubbed; about 5 to 10 percent fibers; massive; 8 to 10 percent mineral matter; common snail shells and snail-shell fragments; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the organic material: More than 51 inches

Surface tier:
Hue—10YR or N
Value—2 to 3
Chroma—0 or 1
Texture—muck (sapric material)

Subsurface tier:
Hue—5YR, 7.5YR, 10YR, or N
Value—2 to 3
Chroma—0 to 3
Texture—muck (sapric material)

210A—Lena muck, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Lena and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have organic deposits less than 51 inches thick
- Soils that contain less organic material in the surface layer
- Soils that have thin overwash of silt loam

Dissimilar soils:
- Poorly drained, noncalcareous mineral soils on toeslopes
- The very poorly drained, noncalcareous Houghton soils on toeslopes

Properties and Qualities of the Lena Soil

Parent material: Herbaceous organic material
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow to moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 23.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 60 to 99 percent
Shrink-swell potential: Not rated
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, November through June
Depth and months of deepest ponding: 0 to 1 foot above the surface, November through June
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

Lisbon Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Lisbon silt loam, 0 to 2 percent slopes; at an elevation of 858 feet; 1,190 feet north and 310 feet east of the southwest corner of sec. 36, T. 43 N., R. 4 E.; Boone County, Illinois; USGS Riley topographic quadrangle; lat. 42 degrees 09 minutes 25 seconds

N. and long. 88 degrees 43 minutes 26 seconds W., NAD 27; UTM Zone 16T, 0357574 easting and 4668632 northing, NAD 83:

Ap—0 to 7 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.

A—7 to 11 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; neutral; clear smooth boundary.

BA—11 to 17 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; friable; common fine faint dark grayish brown (10YR 4/2) and few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt1—17 to 23 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure parting to strong fine subangular blocky; friable; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt2—23 to 28 inches; light olive brown (2.5Y 5/6) silty clay loam; strong fine angular blocky structure; firm; common distinct grayish brown (10YR 5/2) clay films on faces of peds; common fine faint yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine prominent grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—28 to 36 inches; olive brown (2.5Y 4/4) silty clay loam; weak medium prismatic structure parting to strong medium angular and subangular blocky; firm; common distinct grayish brown (10YR 5/2) and few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; slightly alkaline; clear smooth boundary.

2Bt4—36 to 39 inches; yellowish brown (10YR 5/6) clay loam; weak coarse prismatic structure; firm; common distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; few fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; few medium distinct light yellowish brown (10YR 6/4) masses of oxidized iron in the matrix; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 1 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C—39 to 70 inches; light yellowish brown (10YR 6/4) loam; massive; firm; pale brown (10YR 6/3) coatings on vertical faces of joints; few fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; few fine distinct brownish yellow (10YR 6/6) masses of oxidized iron in the matrix; common fine prominent greenish gray (5GY 6/1) iron depletions in the matrix; 3 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Depth to the base of soil development: 24 to 42 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

BA horizon (where present) and Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam, sandy loam, silt loam, or silty clay loam
Content of gravel—2 to 15 percent

59A—Lisbon silt loam, 0 to 2 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Summits and footslopes

Map Unit Composition

Lisbon and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silt loam or silty clay loam instead of loam
- Soils that have more clay and less sand in the upper and middle parts of the profile

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Lisbon Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Lorenzo Series

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Typic Argiudolls

Typical Pedon

Lorenzo loam, 2 to 4 percent slopes; at an elevation of 510 feet; 378 feet south and 1,988 feet west of the northeast corner of sec. 35, T. 33 N., R. 5 E.; La Salle County, Illinois; USGS Seneca topographic quadrangle; lat. 41 degrees 17 minutes 44 seconds N. and long. 88 degrees 36 minutes 58 seconds W., NAD 27; UTM Zone 16T, 0364686 easting and 4572840 northing, NAD 83:

Ap—0 to 6 inches; very dark brown (10YR 2/2) loam, dark grayish brown (10YR 4/2) dry; moderate fine and medium granular structure; friable; neutral; common very fine roots; clear smooth boundary.
AB—6 to 9 inches; dark brown (7.5YR 3/2) loam, brown (7.5YR 5/2) dry; weak medium angular blocky structure; friable; neutral; clear smooth boundary.
Bt1—9 to 16 inches; brown (7.5YR 4/4) clay loam; weak medium and coarse angular blocky structure; firm; common distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; 3 percent gravel; slightly acid; abrupt smooth boundary.
2Bt2—16 to 18 inches; brown (7.5YR 4/4) gravelly loam; weak coarse subangular blocky structure; very friable; few distinct dark brown (7.5YR 3/2) organo-clay films on faces of peds; 20 percent gravel; slightly alkaline; abrupt smooth boundary.
2C—18 to 60 inches; yellowish brown (10YR 5/4) extremely gravelly sand; single grain; loose; 70 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the dark surface layer: 6 to 15 inches
Depth to sandy and gravelly deposits: 12 to 24 inches
Depth to carbonates: 12 to 24 inches
Depth to the base of soil development: 12 to 24 inches

Ap and AB horizons:
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—1 or 2
Texture—loam

Bt and/or 2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—clay loam, loam, or sandy clay loam or the gravelly analogs of these textures
Content of gravel—2 to 35 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand; stratified in most pedons
Content of gravel—20 to 75 percent
Content of cobbles—3 to 15 percent

318C2—Lorenzo loam, 4 to 6 percent slopes, eroded

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Shoulders and backslopes

Map Unit Composition

Lorenzo and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that have sandy and gravelly deposits at a depth of less than 12 inches or more than 24 inches
- Soils that have carbonates at a depth of less than 12 inches or more than 24 inches
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that are slightly eroded

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes
- Soils that are severely eroded

Properties and Qualities of the Lorenzo Soil

Parent material: Loamy outwash over calcareous sand and gravel
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

318D2—Lorenzo loam, 6 to 12 percent slopes, eroded

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Backslopes

Map Unit Composition

Lorenzo and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that have sandy and gravelly deposits at a depth of less than 12 inches or more than 24 inches
- Soils that have carbonates at a depth of less than 12 inches or more than 24 inches
- Soils that have slopes of less than 6 percent or more than 12 percent

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes
- Soils that are severely eroded

Properties and Qualities of the Lorenzo Soil

Parent material: Loamy outwash over calcareous sand and gravel
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 3.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Martinton Series

Taxonomic classification: Fine, illitic, mesic Aquic Argiudolls

Typical Pedon

Martinton silt loam, 0 to 2 percent slopes; at an elevation of 650 feet; 425 feet north and 160 feet west of the southeast corner of sec. 5, T. 27 N., R. 7 E.; Livingston

County, Illinois; USGS Forrest North topographic quadrangle; lat. 40 degrees 50 minutes 01 second N. and long. 88 degrees 25 minutes 58 seconds W., NAD 27; UTM Zone 16T, 0379178 easting and 4521282 northing, NAD 83:

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

A—7 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

BA—12 to 19 inches; brown (10YR 4/3) silty clay loam; moderate fine angular blocky structure; friable; few very fine roots; many faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Btg1—19 to 27 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine prismatic structure parting to moderate fine angular blocky; firm; few very fine roots; common distinct very dark grayish brown (2.5Y 3/2) organo-clay films on faces of peds; few fine black (7.5YR 2.5/1) iron-manganese concretions throughout; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

Btg2—27 to 39 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate fine angular blocky; firm; few very fine roots; common faint very dark grayish brown (2.5Y 3/2) organo-clay films on faces of peds; few black (7.5YR 2.5/1) iron-manganese concretions throughout; many medium distinct light olive brown (2.5Y 5/4) and few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear smooth boundary.

BCtg—39 to 46 inches; grayish brown (2.5Y 5/2) silt loam; weak medium prismatic structure; friable; few faint dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine black (7.5YR 2.5/1) iron-manganese concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; very slightly effervescent; slightly alkaline; clear smooth boundary.

Cg—46 to 60 inches; 60 percent grayish brown (2.5Y 5/2) and 40 percent yellowish brown (10YR 5/6), stratified silty clay loam and sandy loam; massive; friable; few fine black (7.5YR 2.5/1) iron-manganese concretions throughout; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Depth to carbonates: 24 to 50 inches
Depth to the base of soil development: 30 to 52 inches

Ap and/or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Bt, Btg, or BCtg horizon:
Hue—10YR or 2.5Y
Value—4 or 5

Chroma—2 or 3
Texture—silty clay loam or silty clay

Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam, silty clay loam, silty clay, clay loam, loam, or sandy loam; typically stratified

189A—Martinton silt loam, 0 to 2 percent slopes

Setting

Landform: Lake plains
Position on the landform: Summits and footslopes

Map Unit Composition

Martinton and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have more silt and less clay in the control section
- Soils that have till in the lower part of the profile

Dissimilar soils:
- The poorly drained Ashkum and Milford soils on toeslopes

Properties and Qualities of the Martinton Soil

Parent material: Lacustrine deposits
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

189B—Martinton silt loam, 2 to 4 percent slopes

Setting

Landform: Lake plains
Position on the landform: Backslopes and footslopes

Map Unit Composition

Martinton and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have more silt and less clay in the control section
- Soils that have till in the lower part of the profile

Dissimilar soils:
- The poorly drained Ashkum and Milford soils on toeslopes

Properties and Qualities of the Martinton Soil

Parent material: Lacustrine deposits
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Mayville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Mayville silt loam, 2 to 5 percent slopes; at an elevation of 1,040 feet; 1,450 feet south and 210 feet east of the northwest corner of sec. 8, T. 10 N., R. 18 E.; Washington County, Wisconsin; USGS Hartford West topographic quadrangle; lat. 43 degrees 21 minutes 00 seconds N. and long. 88 degrees 23 minutes 51 seconds W., NAD 27; UTM Zone 16T, 0386731 easting and 4800631 northing, NAD 83:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; neutral; abrupt wavy boundary.

E—6 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium platy structure; very friable; neutral; abrupt smooth boundary.

BE—8 to 12 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; friable; neutral; clear smooth boundary.

Bt1—12 to 24 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; firm; common faint dark brown (10YR 3/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/4 and 5/6) masses of oxidized iron in the matrix in the lower part of the horizon; neutral; clear smooth boundary.

Bt2—24 to 28 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; firm; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few medium faint dark yellowish brown (10YR 4/4) masses of oxidized iron and manganese in the matrix; neutral; clear smooth boundary.

2Bt3—28 to 32 inches; brown (10YR 4/3) clay loam grading to yellowish brown (10YR 5/4) loam in the lower part; moderate coarse subangular blocky structure; firm; few faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few medium faint dark yellowish brown (10YR 4/4) masses of oxidized iron and manganese in the matrix; 3 percent gravel; slightly effervescent in the lower part; neutral; clear smooth boundary.

2C—32 to 60 inches; light yellowish brown (10YR 6/4) gravelly sandy loam; massive; friable; few medium prominent brownish yellow (10YR 6/8) masses of oxidized iron in the matrix; few medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; 17 percent gravel and 1 percent cobbles; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Depth to the base of soil development: 24 to 48 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam

E horizon (where present):
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam

BE horizon (where present):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam

Bt horizon:
Hue—10YR
Value—3 or 4

Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—loam, clay loam, silt loam, or silty clay loam
Content of gravel—3 to 12 percent

2C horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—3 or 4
Texture—loam, sandy loam, silt loam, silty clay loam, gravelly loam, or gravelly sandy loam
Content of gravel—5 to 20 percent
Content of cobbles—0 to 5 percent

193A—Mayville silt loam, 0 to 2 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Summits and backslopes

Map Unit Composition

Mayville and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silty clay loam instead of loam
- Soils that have more clay and less sand in the upper and middle parts of the profile
- Soils that have slopes of more than 2 percent
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have a thicker and darker surface layer

Properties and Qualities of the Mayville Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

193B—Mayville silt loam, 2 to 5 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Summits and backslopes

Map Unit Composition

Mayville and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silty clay loam instead of loam
- Soils that have a thicker and darker surface layer
- Soils that have more clay and less sand in the upper and middle parts of the profile
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet

Properties and Qualities of the Mayville Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

193C2—Mayville silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Mayville and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silty clay loam instead of loam
- Soils that have more clay and less sand in the upper and middle parts of the profile
- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that have a seasonal high water table at a depth of more than 3.5 feet

Properties and Qualities of the Mayville Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Milford Series

Taxonomic classification: Fine, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Milford silty clay loam, 0 to 2 percent slopes, at an elevation of 643 feet; 1,450 feet north and 70 feet east of the southwest corner of sec. 4, T. 26 N., R. 14 W.; Iroquois County, Illinois; USGS Gilman topographic quadrangle; lat. 40 degrees 45 minutes 25 seconds N. and long. 87 degrees 57 minutes 28 seconds W., NAD 27; UTM Zone 16T, 0419150 easting and 4512226 northing, NAD 83:

Ap—0 to 9 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine and fine subangular and angular blocky structure; firm; many fine roots; slightly acid; abrupt smooth boundary.
A—9 to 18 inches; black (10YR 2/1) silty clay, dark gray (10YR 4/1) dry; moderate and strong very fine subangular blocky structure; firm; common fine roots; slightly acid; clear smooth boundary.
BA—18 to 22 inches; very dark gray (10YR 3/1) silty clay, gray (10YR 5/1) dry; moderate fine and medium angular blocky structure; very firm; common fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; common medium prominent olive brown (2.5Y 4/4) masses of oxidized iron and manganese in the matrix; common medium faint dark grayish brown (2.5Y 4/2) iron depletions in the matrix; neutral; clear smooth boundary.
Bg1—22 to 31 inches; gray (5Y 5/1) silty clay loam; moderate medium and coarse prismatic structure parting to moderate medium and coarse angular and subangular blocky; very firm; common fine roots; many distinct dark gray (5Y 4/1) pressure faces on peds; few fine black (N 2.5/) iron-manganese concretions throughout; many medium prominent dark yellowish brown (10YR 4/4) masses of oxidized iron and manganese in the matrix; many medium faint grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.
Bg2—31 to 42 inches; gray (5Y 5/1) clay loam; moderate coarse prismatic structure parting to moderate medium and coarse angular blocky; very firm; few fine roots; common medium prominent dark yellowish brown (10YR 4/4) masses of oxidized iron and manganese and yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear smooth boundary.
Bg3—42 to 50 inches; dark gray (5Y 4/1) silty clay loam stratified with thin bands of clay loam; moderate coarse prismatic structure parting to moderate coarse subangular and angular blocky; firm; few fine roots; many medium prominent dark yellowish brown (10YR 4/4) masses of oxidized iron and manganese and yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear wavy boundary.
Cg—50 to 60 inches; gray (5Y 5/1) clay loam stratified with bands of fine sandy loam and silty clay loam; massive; firm; few fine roots; many coarse prominent yellowish brown (10YR 5/4 and 5/8) masses of oxidized iron in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 36 to 60 inches

Ap and A horizons:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam or silty clay

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam, silty clay, or clay loam; stratified with these textures in some pedons

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—stratified sandy loam to silty clay loam

69A—Milford silty clay loam, 0 to 2 percent slopes

Setting

Landform: Lake plains
Position on the landform: Toeslopes

Map Unit Composition

Milford and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have more silt and less clay in the control section
- Soils that are overlain by light-colored recent deposits
- Soils that have till in the lower part of the profile

Dissimilar soils:
- The somewhat poorly drained Martinton soils on summits and footslopes
- The very poorly drained Houghton soils on toeslopes

Properties and Qualities of the Milford Soil

Parent material: Lacustrine deposits
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 6 percent
Shrink-swell potential: High
Depth and months of highest apparent seasonal high water table: 1 to 2 feet, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Millbrook Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon

Millbrook silt loam, 0 to 2 percent slopes; at an elevation of 595 feet; 2,440 feet south and 1,800 feet west of the northeast corner of sec. 31, T. 33 N., R. 10 E.; Will County, Illinois; USGS Symerton topographic quadrangle; lat. 41 degrees 17 minutes 56 seconds N. and long. 88 degrees 07 minutes 06 seconds W., NAD 27; UTM Zone 16T, 0406367 easting and 4572543 northing, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine and medium granular structure; friable; common very fine and fine roots; neutral; clear smooth boundary.

BE—7 to 11 inches; 55 percent brown (10YR 5/3) and 45 percent dark grayish brown (10YR 4/2) silty clay loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak fine granular; friable; common very fine and fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds and in pores; few fine distinct dark gray (10YR 4/1) iron depletions in the matrix; neutral; clear smooth boundary.

Bt1—11 to 24 inches; brown (10YR 5/3) silty clay loam; moderate medium and coarse prismatic structure parting to weak fine and medium subangular blocky; friable; common very fine and fine roots; many prominent dark gray (10YR 4/1) clay films on faces of peds and in pores; many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (7.5YR 2.5/1) weakly cemented manganese nodules throughout; common fine prominent strong brown (7.5YR 4/6) masses of oxidized iron in the matrix; neutral; gradual wavy boundary.

2Bt2—24 to 35 inches; yellowish brown (10YR 5/6) clay loam; weak medium and coarse prismatic structure parting to weak fine and medium subangular blocky; friable; common very fine roots; many prominent dark gray (10YR 4/1) clay films on faces of peds and in pores; common prominent very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common fine distinct yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; common fine and medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; 1 percent gravel; slightly alkaline; gradual wavy boundary.

2Bt3—35 to 46 inches; yellowish brown (10YR 5/6) loam; weak medium and coarse subangular blocky structure; friable; common very fine roots; common prominent brown (10YR 4/3) clay films on faces of peds; common fine and medium faint brownish yellow (10YR 6/6) masses of oxidized iron in the matrix; common medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; slightly alkaline; clear wavy boundary.

2BC—46 to 53 inches; brownish yellow (10YR 6/6) loam; weak medium and coarse subangular blocky structure; very friable; common medium faint yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 14 percent gravel; strongly effervescent; slightly alkaline; clear wavy boundary.

2C1—53 to 65 inches; 80 percent yellowish brown (10YR 5/4) and 20 percent dark grayish brown (10YR 4/2) sandy loam; massive; very friable; common medium and coarse distinct dark yellowish brown (10YR 4/6) and common coarse prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; 8 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.

2C2—65 to 80 inches; brown (10YR 5/3), stratified sandy loam and loamy sand with thin lenses of coarse sand; massive; very friable; 9 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess or other silty material: 24 to 40 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to 71 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

E or BE horizon:
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt and/or Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam

2Bt, 2Btg, 2BC, and/or 2BCg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 8
Texture—sandy loam, loam, silt loam, clay loam, or sandy clay loam
Content of gravel—less than 15 percent

2C or 2Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Texture—stratified sandy loam, loam, silt loam, clay loam, or loamy sand
Content of gravel—less than 15 percent

219A—Millbrook silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Footslopes and summits

Map Unit Composition

Millbrook and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker surface layer
- Soils that have outwash at a depth of more than 40 inches
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that are underlain by till

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Millbrook Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Millington Series

Taxonomic classification: Fine-loamy, mixed, superactive, calcareous, mesic Cumulic Endoaquolls

Typical Pedon

Millington silt loam, 0 to 2 percent slopes, occasionally flooded; at an elevation of 650 feet; 608 feet north and 237 feet east of the southwest corner of sec. 27, T. 39 N., R. 8 E.; Kane County, Illinois; USGS Aurora North topographic quadrangle; lat. 41 degrees 49 minutes 37 seconds N. and long. 88 degrees 19 minutes 12 seconds W., NAD 27; UTM Zone 16T, 0390381 easting and 4631411 northing, NAD 83:

A1—0 to 12 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; strongly effervescent; moderately alkaline; gradual wavy boundary.

A2—12 to 21 inches; very dark gray (10YR 3/1) silt loam containing about 20 percent sand; gray (10YR 5/1) dry; weak medium subangular blocky structure parting to weak medium granular; friable; common very fine and fine roots; 3 percent snail shells and 5 percent snail-shell fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

AB—21 to 26 inches; very dark grayish brown (2.5Y 3/2) silt loam containing about 25 percent sand; grayish brown (2.5Y 5/2) dry; weak fine and medium subangular blocky structure parting to weak fine granular; friable; common very fine roots; few distinct very dark gray (10YR 3/1) organic coatings in root channels and pores; 2 percent snail shells and 6 percent snail-shell fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bg1—26 to 36 inches; very dark grayish brown (2.5Y 4/2) loam; weak fine subangular blocky structure; friable; common very fine roots; few distinct very dark grayish brown (2.5Y 3/2) organic coatings in root channels and pores; common fine prominent dark yellowish brown (10YR 4/6) iron-manganese concretions

throughout; 2 percent snail shells and 4 percent snail-shell fragments; strongly effervescent; moderately alkaline; gradual wavy boundary.

Bg2—36 to 49 inches; dark grayish brown (2.5Y 4/2), stratified silt loam and sandy loam; weak medium subangular blocky structure; friable; common very fine roots; few distinct very dark grayish brown (2.5Y 3/2) organic coatings in root channels and pores; many fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; 2 percent snail shells and 3 percent snail-shell fragments; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg1—49 to 57 inches; black (2.5Y 2.5/1), stratified silt loam and sandy loam; massive; friable; few very fine roots; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; 2 percent snail shells and 3 percent snail-shell fragments; strongly effervescent; moderately alkaline; clear wavy boundary.

Cg2—57 to 62 inches; dark gray (2.5Y 4/1) sandy loam; massive; friable; 14 percent gravel; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates: Less than 10 inches
Depth to the base of soil development: 24 to 48 inches

Ap, A, and/or AB horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silt loam or loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 5
Chroma—0 to 2
Texture—loam, silt loam, clay loam, or silty clay loam; strata of sandy loam in some pedons
Content of gravel—less than 15 percent

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 2
Texture—stratified loam, silt loam, sandy loam, or clay loam
Content of gravel—less than 15 percent

3082A—Millington silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Millington and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the upper and middle parts of the profile

- Soils that have more gravel in the lower part of the profile
- Soils that have a thinner subsurface layer and are lighter colored in the upper part of the profile
- Soils that do not have carbonates in the surface layer

Dissimilar soils:
- The poorly drained, noncalcareous Sawmill soils on flood plains

Properties and Qualities of the Millington Soil

Parent material: Calcareous alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 6 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

8082A—Millington silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Millington and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more silt in the upper and middle parts of the profile
- Soils that have more gravel in the lower part of the profile
- Soils that have a thinner subsurface layer and are lighter colored in the upper part of the profile
- Soils that do not have carbonates in the surface layer

Dissimilar soils:
- The poorly drained, noncalcareous Sawmill soils on flood plains

Properties and Qualities of the Millington Soil

Parent material: Calcareous alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 6 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

MW—Miscellaneous water

This map unit consists of bodies of water used primarily for municipal or agricultural waste treatment lagoons. Included in mapping are established earth berms around the lagoon.

Mundelein Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Mundelein silt loam, 0 to 2 percent slopes; at an elevation of 778 feet; 2,158 feet north and 2,425 feet west of the southeast corner of sec. 14, T. 45 N., R. 10 E.; Lake County, Illinois; USGS Antioch topographic quadrangle; lat. 42 degrees 22 minutes 38 seconds N. and long. 88 degrees 01 minute 59 seconds W., NAD 27; UTM Zone 16T, 0414949 easting and 4692180 northing, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak medium subangular blocky structure parting to weak fine granular; friable; common very fine roots; slightly acid; clear smooth boundary.
A—7 to 13 inches; black (N 2.5/) silt loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to weak fine granular; friable; common very fine roots; neutral; clear smooth boundary.
AB—13 to 17 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; weak very fine and fine subangular blocky structure parting to weak fine granular; friable; few very fine roots; many distinct black (10YR 2/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—17 to 21 inches; brown (10YR 4/3) silty clay loam; moderate very fine and fine subangular blocky structure; friable; few distinct black (10YR 2/1) organic coatings on faces of peds; few distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; neutral; clear smooth boundary.

Bt2—21 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; few distinct dark grayish brown (10YR 4/2) and brown (10YR 4/3) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 2 percent gravel; neutral; clear smooth boundary.

Bt3—26 to 31 inches; light olive brown (2.5Y 5/4) silt loam; weak medium subangular blocky structure; friable; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 4 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2BC—31 to 42 inches; 65 percent yellowish brown (10YR 5/4 and 5/6) and 35 percent light brownish gray (2.5Y 6/2), stratified silt loam and loam; weak medium prismatic structure parting to weak medium subangular blocky; friable; common fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; 8 percent gravel; strongly effervescent; moderately alkaline; gradual smooth boundary.

2C—42 to 60 inches; 35 percent light brown (7.5YR 6/3), 35 percent yellowish brown (10YR 5/6), and 30 percent light brownish gray (2.5Y 6/2), stratified loam and silt loam; massive; friable; common fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; 6 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches
Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: 20 to 40 inches
Depth to the base of soil development: 24 to 50 inches

Ap, A, and/or AB horizon:
Hue—10YR or N
Value—2 to 3
Chroma—0 to 2
Texture—silt loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam

2Bt and/or 2BC horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt loam, loam, clay loam, sandy clay loam, or sandy loam; commonly stratified
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 8
Texture—stratified silt loam to fine sand
Content of gravel—less than 15 percent

442A—Mundelein silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and footslopes

Map Unit Composition

Mundelein and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are underlain by till
- Soils that have carbonates at a depth of more than 40 inches
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have outwash at a depth of more than 40 inches

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Mundelein Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Nappanee Series

Taxonomic classification: Fine, illitic, mesic Aeric Epiaqualfs

Typical Pedon

Nappanee silt loam, 2 to 4 percent slopes; at an elevation of 665 feet; 1,220 feet south and 500 feet east of the northwest corner of sec. 10, T. 44 N., R. 11 E.; Lake County, Illinois; USGS Libertyville topographic quadrangle; lat. 42 degrees 18 minutes 34 seconds N. and long. 87 degrees 56 minutes 33 seconds W., NAD 27; UTM Zone 16T, 0422317 easting and 4684567 northing, NAD 83:

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 6/1) dry; weak very fine and fine granular structure; friable; many very fine and fine roots; neutral; abrupt smooth boundary.

E—4 to 9 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak thick platy structure; friable; many very fine and fine roots; neutral; clear smooth boundary.

Bt1—9 to 19 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine and medium subangular blocky structure; firm; common very fine roots; common prominent very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine and medium prominent dark yellowish brown (10YR 4/6) weakly cemented iron-manganese concretions throughout; common fine black (10YR 2/1) strongly cemented manganese nodules throughout; 1 percent gravel; slightly alkaline; clear smooth boundary.

Bt2—19 to 23 inches; brown (10YR 4/3) silty clay; moderate medium subangular blocky structure; firm; common very fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; common medium prominent strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; common fine distinct gray (10YR 5/1) iron depletions in the matrix; 3 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

Bt3—23 to 28 inches; brown (10YR 5/3) silty clay; weak medium prismatic structure parting to moderate medium subangular blocky; very firm; common very fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common medium prominent strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; common medium faint grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; slightly effervescent; moderately alkaline; gradual smooth boundary.

Btk1—28 to 36 inches; brown (10YR 5/3) silty clay; weak medium prismatic structure parting to weak medium subangular blocky; very firm; common very fine roots; common distinct dark grayish brown (2.5Y 4/2) and grayish brown (2.5Y 5/2) clay films on faces of peds and in pores; common distinct dark brown (7.5YR 3/2) organo-clay films on surfaces along pores; common medium and coarse prominent strong brown (7.5YR 5/6) and common medium and coarse faint yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; common medium faint grayish brown (10YR 5/2) iron depletions in the matrix; many fine and medium pale yellow (2.5Y 8/2) carbonate concretions throughout; 2 percent gravel; strongly effervescent; moderately alkaline; gradual smooth boundary.

Btk2—36 to 46 inches; yellowish brown (10YR 5/4) silty clay; weak medium prismatic structure parting to weak coarse subangular blocky; very firm; common very fine roots; common prominent pale yellow (2.5Y 8/2) carbonate coatings on horizontal faces of peds; many prominent dark gray (2.5Y 4/1) and gray (2.5Y 5/1) clay films on faces of peds; common prominent dark brown (7.5YR 3/2) organo-clay films on surfaces along pores; common fine and medium prominent strong brown

(7.5YR 5/8) weakly cemented iron-manganese concretions throughout; few fine black (7.5YR 2.5/1) strongly cemented iron-manganese concretions throughout; common fine and medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; common fine and medium pale yellow (2.5Y 8/2) carbonate concretions throughout; 2 percent gravel; strongly effervescent; moderately alkaline; gradual wavy boundary.

Cd—46 to 60 inches; yellowish brown (10YR 5/4) silty clay loam; massive; very firm; common medium distinct strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; few fine black (7.5YR 2.5/1) strongly cemented iron-manganese concretions throughout; common medium pale yellow (2.5Y 8/2) carbonate concretions throughout; 2 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 20 inches
Depth to carbonates: 18 to 40 inches
Depth to densic material: 30 to 60 inches
Depth to the base of soil development: 24 to 60 inches

A or Ap horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—1 or 2
Texture—silt loam

Bt and/or Btk horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 4
Texture—silty clay or clay
Content of gravel—1 to 10 percent

Cd horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay, clay, or silty clay loam
Content of gravel—2 to 10 percent

228A—Nappanee silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines, lake plains, and end moraines
Position on the landform: Summits and footslopes

Map Unit Composition

Nappanee and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay and more silt in the upper part of the profile
- Soils that have a thicker and darker surface layer
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Nappanee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 30 to 60 inches to dense material
Available water capacity: About 6.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

228B—Nappanee silt loam, 2 to 4 percent slopes

Setting

Landform: Ground moraines, end moraines, and lake plains
Position on the landform: Backslopes and footslopes

Map Unit Composition

Nappanee and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay and more silt in the upper part of the profile
- Soils that are moderately eroded
- Soils that have a thicker and darker surface layer
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have slopes of less than 2 percent or more than 4 percent

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Nappanee Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 30 to 60 inches to dense material
Available water capacity: About 6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

802B—Orthents, loamy, undulating

General Description

This map unit consists of areas of disturbed soil material. The soils are fine-loamy, mixed, active, nonacid, mesic Oxyaquic Udorthents. Typically, the surface layer is very dark grayish brown, friable loam about 6 inches thick. The upper part of the underlying material is brown and dark yellowish brown, firm clay loam and loam. The lower part to a depth of 60 inches is mottled yellowish brown and brown, firm loam.

Setting

Landform: Areas of leveled land and fill on ground moraines and outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Orthents, loamy, and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have more silt and less sand in the profile
- Soils that have a seasonal high water table within a depth of 3.5 feet
- Soils that have carbonates at or near the surface
- Soils that have more clay and less silt in the profile
- Soils that have slopes of less than 1 percent or more than 6 percent

Dissimilar soils:
- Areas of undisturbed soils
- The poorly drained Drummer and Elpaso soils on toeslopes

Properties and Qualities of the Loamy Orthents

Parent material: Earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 3.5 to 5.0 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Pella Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Pella silty clay loam, 0 to 2 percent slopes, bedrock substratum; at an elevation of 607 feet; 820 feet south and 1,400 feet east of the northwest corner of sec. 27, T. 35 N., R. 7 E.; Kendall County, Illinois; USGS Lisbon topographic quadrangle; lat. 41 degrees 29 minutes 10 seconds N. and long. 88 degrees 25 minutes 03 seconds W., NAD 27; UTM Zone 16T, 0381661 easting and 4593708 northing, NAD 83:

Ap—0 to 4 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; friable; common very fine roots; neutral; clear smooth boundary.
A—4 to 11 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure parting to moderate fine and medium granular; friable; common very fine roots; slightly alkaline; abrupt smooth boundary.
Bg1—11 to 19 inches; 65 percent dark gray (2.5Y 4/1) and 35 percent grayish brown (2.5Y 5/2) silty clay loam; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; common very fine roots; common fine prominent dark yellowish brown (10YR 4/6) and common fine and medium prominent olive yellow (2.5Y 6/8) masses of oxidized iron in the matrix; 5 percent very dark gray (10YR 3/1) krotovinas; neutral; clear smooth boundary.
Bg2—19 to 25 inches; 70 percent dark gray (2.5Y 4/1) and 30 percent gray (5Y 5/1) silty clay loam; moderate medium prismatic structure; friable; common very fine roots; common medium and coarse prominent dark yellowish brown (10YR 4/6) and many fine and medium prominent olive yellow (2.5Y 6/8) masses of oxidized iron in the matrix; slightly alkaline; clear smooth boundary.

Bg3—25 to 32 inches; gray (2.5Y 5/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common very fine roots; few distinct very dark gray (2.5Y 3/1) organo-clay films on surfaces along pores; many medium and coarse prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; slightly alkaline; clear smooth boundary.
2BCg—32 to 38 inches; gray (2.5Y 5/1) clay loam; weak medium subangular blocky structure; firm; common very fine roots; common fine and medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; slightly effervescent; slightly alkaline; abrupt smooth boundary.
3Cr—38 to 47 inches; grayish brown (2.5Y 5/2), stratified loam and sandy loam; massive; friable; common very fine roots; common fine and medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; common fine and medium prominent dark gray (2.5Y 4/1) iron depletions in the matrix; 8 percent gravel; strongly effervescent; moderately alkaline; abrupt smooth boundary.
3R—47 inches; limestone and dolostone bedrock.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: 16 to 40 inches
Thickness of the solum: 30 to 50 inches

Ap or A horizon:
Hue—10YR, 2.5Y, or N
Value—2 to 3
Chroma—0 to 2
Texture—silty clay loam

Bg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam

2Btg and/or 2BCg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 8
Texture—silt loam, loam, sandy loam, silty clay loam, or clay loam
Content of gravel—less than 10 percent

3Cr horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 to 8
Texture—stratified loamy sand to silty clay loam
Content of gravel—less than 15 percent

44A—Pella silty clay loam, 0 to 2 percent slopes, bedrock substratum

Setting

Landform: Outwash plains and lake plains
Position on the landform: Toeslopes

Map Unit Composition

Pella and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that average more than 35 percent clay in the control section
- Soils that are overlain by light-colored recent deposits
- Soils that have bedrock at a depth of less than 40 inches or more than 60 inches

Properties and Qualities of the Pella Soil

Parent material: Loess or other silty material and the underlying outwash over limestone and dolostone
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Very slow to moderately slow
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 9.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 6 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Peotone Series

Taxonomic classification: Fine, smectitic, mesic Cumulic Vertic Endoaquolls

Typical Pedon

Peotone silty clay loam, 0 to 2 percent slopes; at an elevation of 707 feet; 315 feet south and 2,233 feet east of the northwest corner of sec. 21, T. 29 N., R. 9 E.; Ford County, Illinois; USGS Cabery topographic quadrangle; lat. 40 degrees 58 minutes 49 seconds N. and long. 88 degrees 12 minutes 00 seconds W., NAD 27; UTM Zone 16T, 0399043 easting and 4537265 northing, NAD 83:

Ap—0 to 7 inches; black (N 2.5/) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.
A—7 to 13 inches; black (N 2.5/) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

Bg1—13 to 27 inches; black (N 2.5/) silty clay loam, dark gray (10YR 4/1) dry; moderate medium angular blocky structure; friable; common very fine roots; neutral; clear smooth boundary.
Bg2—27 to 41 inches; dark gray (10YR 4/1) silty clay; moderate fine prismatic structure; firm; common very fine roots; common fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.
Bg3—41 to 50 inches; dark gray (10YR 4/1) silty clay; moderate medium prismatic structure; few very fine roots; firm; common medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.
Cg—50 to 60 inches; dark gray (10YR 4/1) silty clay loam; massive; firm; few fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates: More than 30 inches
Depth to the base of soil development: 38 to 60 inches

Ap and/or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2, 2.5, or 3
Chroma—0 or 1
Texture—silty clay loam

Bg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 to 6
Chroma—0 to 2
Texture—silty clay loam or silty clay

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam, silt loam, or silty clay

330A—Peotone silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Peotone and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
• Soils that have a thicker surface layer

- Soils that have a thinner surface layer
- Soils that are underlain by till
- Soils that have less clay and more silt in the lower part of the profile
- Soils that are overlain by light-colored recent deposits

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes
- The very poorly drained, mucky Houghton soils on toeslopes

Properties and Qualities of the Peotone Soil

Parent material: Colluvium
Drainage class: Very poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 5 to 7 percent
Shrink-swell potential: High
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through June
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through June
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

864—Pits, quarry

General Description

This map unit is in nearly level and gently sloping areas from which limestone and dolostone have been extracted. The pits have nearly vertical sidewalls. Some pits are active, and others have been abandoned. Some contain water.

Map Unit Composition

Pits, quarry: 92 percent
Dissimilar components: 8 percent

Components of Minor Extent

Dissimilar components:
- The well drained, loamy Orthents on summits and backslopes

865—Pits, gravel

General Description

This map unit consists of nearly level and gently sloping areas from which gravel has been extracted. The pits have nearly vertical sidewalls. Some pits are active, and others have been abandoned. Some contain water.

Map Unit Composition

Pits, gravel: 92 percent
Dissimilar components: 8 percent

Components of Minor Extent

Dissimilar components:
- The well drained, loamy Orthents on summits and backslopes
- The poorly drained Drummer soils on toeslopes

Plano Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Plano soil in map unit 199C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Plano silt loam, 0 to 2 percent slopes, at an elevation of 715 feet; 1,200 feet south and 1,920 feet east of the northwest corner of sec. 13, T. 12 N., R. 7 E.; Stark County, Illinois; USGS Castleton topographic quadrangle; lat. 41 degrees 01 minute 45 seconds N. and long. 89 degrees 39 minutes 00 seconds W., NAD 27; UTM Zone 16T, 0277210 easting and 4545382 northing, NAD 83:

Ap—0 to 9 inches; very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.
A—9 to 14 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many very fine roots; slightly acid; clear smooth boundary.
Bt1—14 to 19 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.
Bt2—19 to 31 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
Bt3—31 to 43 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; common distinct very pale brown (10YR 7/3) (dry) clay depletions on faces of peds; few fine faint yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

Bt4—43 to 49 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium prismatic structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct very pale brown (10YR 7/3) (dry) clay depletions on faces of peds; slightly acid; clear smooth boundary.

2Bt5—49 to 53 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure; friable; few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2BCt—53 to 60 inches; brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; many distinct dark yellowish brown (10YR 3/4) clay bridges between sand grains; about 5 percent gravel; neutral; gradual smooth boundary.

2C—60 to 72 inches; stratified yellowish brown (10YR 5/6) and brown (7.5YR 4/4) sandy loam, loam, and loamy sand; massive; friable; about 12 percent gravel; neutral.

Range in Characteristics

Thickness of the dark surface layer: 7 to 20 inches
Thickness of the loess or other silty material: 40 to 60 inches
Depth to the base of soil development: 44 to 70 inches

Ap and/or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam or silty clay loam

2Bt and/or 2BC horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—loam, sandy loam, sandy clay loam, or clay loam

2C horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—stratified loam, loamy sand, sandy loam, or silt loam

199A—Plano silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Map Unit Composition

Plano and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have slopes of more than 2 percent
- Soils that have till in the lower part of the profile
- Soils that have a thinner surface layer

Dissimilar soils:
- The somewhat poorly drained Elburn soils on summits and footslopes
- The poorly drained Drummer and Knight soils on toeslopes

Properties and Qualities of the Plano Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

199B—Plano silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and shoulders

Map Unit Composition

Plano and similar soils: 91 percent
Dissimilar soils: 9 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have till in the lower part of the profile
- Soils that have a thinner surface layer
- Soils that have slopes of less than 2 percent or more than 5 percent

Dissimilar soils:
- The somewhat poorly drained Elburn soils on summits and footslopes
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Plano Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

199C2—Plano silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Shoulders and backslopes

Map Unit Composition

Plano and similar soils: 91 percent
Dissimilar soils: 9 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have outwash within a depth of 40 inches
- Soils that have till in the lower part of the profile
- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that are slightly eroded

Dissimilar soils:
- The somewhat poorly drained Elburn soils on summits and footslopes
- The poorly drained Drummer soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Plano Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid

Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Proctor Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Proctor soil in map unit 148C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Proctor silt loam, 2 to 5 percent slopes; at an elevation of 705 feet; 204 feet north and 2,460 feet west of the southeast corner of sec. 3, T. 11 N., R. 6 E.; Peoria County, Illinois; USGS Princeville topographic quadrangle; lat. 40 degrees 57 minutes 37 seconds N. and long. 89 degrees 48 minutes 07 seconds W., NAD 27; UTM Zone 16T, 0264189 easting and 4538133 northing, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine roots; moderately acid; clear smooth boundary.
A—8 to 11 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.
Bt1—11 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine subangular blocky structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—16 to 23 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt3—23 to 28 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
2Bt4—28 to 33 inches; yellowish brown (10YR 5/4) loam; moderate medium subangular blocky structure; friable; few very fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt5—33 to 46 inches; strong brown (7.5YR 5/6), stratified loam and sandy loam; weak coarse subangular blocky structure; very friable; few very fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; slightly acid; gradual smooth boundary.

2C—46 to 60 inches; strong brown (7.5YR 5/6), stratified sandy loam and loamy sand; massive; very friable; slightly acid.

Range in Characteristics

Thickness of the dark surface layer: 7 to 20 inches
Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to 65 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, silt loam, sandy loam, or clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified loam, sandy loam, or loamy sand
Content of gravel—1 to 15 percent

148A—Proctor silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Map Unit Composition

Proctor and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of more than 2 percent
- Soils that have carbonates within a depth of 40 inches
- Soils that have outwash at a depth of more than 40 inches

- Soils that are underlain by till
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The somewhat poorly drained Brenton soils on summits and footslopes
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Proctor Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

148B—Proctor silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits and shoulders

Map Unit Composition

Proctor and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that have carbonates within a depth of 40 inches
- Soils that have outwash at a depth of more than 40 inches
- Soils that are underlain by till
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The somewhat poorly drained Brenton soils on summits and footslopes
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Proctor Soil

Parent material: Loess over outwash
Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

148C2—Proctor silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Backslopes and shoulders

Map Unit Composition

Proctor and similar soils: 85 percent
Dissimilar soils: 15 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that have carbonates within a depth of 40 inches
- Soils that are underlain by till
- Soils that are slightly eroded
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The somewhat poorly drained Brenton soils on summits and footslopes
- The poorly drained Drummer soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Proctor Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Ripon Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Ripon soil in map unit 324C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Ripon silt loam, 2 to 5 percent slopes; at an elevation of 850 feet; 150 feet south and 1,350 feet west of the northeast corner of sec. 35, T. 42 N., R. 2 E.; Ogle County, Illinois; USGS Fairdale topographic quadrangle; lat. 42 degrees 04 minutes 45 seconds N. and long. 88 degrees 57 minutes 49 seconds W., NAD 27; UTM Zone 16T, 0337562 easting and 4659784 northing, NAD 83:

Ap—0 to 6 inches; very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; weak thin platy structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.
A—6 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine subangular blocky structure; friable; common very fine roots; moderately acid; clear smooth boundary.
BA—12 to 15 inches; very dark grayish brown (10YR 3/2) and brown (10YR 4/3) silt loam; moderate fine subangular blocky structure; friable; common very fine roots; moderately acid; clear smooth boundary.
Bt1—15 to 22 inches; brown (10YR 4/3) silt loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—22 to 29 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) clay films on faces of peds; moderately acid; abrupt smooth boundary.
2Bt3—29 to 35 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct dark brown (7.5YR 3/2) clay films on faces of peds; 6 percent gravel; moderately acid; abrupt smooth boundary.
3R—35 inches; brownish yellow (10YR 6/6) dolomitic limestone.

Range in Characteristics

Thickness of the dark surface layer: 7 to 15 inches
Thickness of the loess or other silty material: 20 to 36 inches
Depth to bedrock: 20 to 40 inches
Depth to the base of soil development: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—2
Texture—silt loam

BA horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam or silty clay loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 or 4
Texture—clay loam, sandy clay loam, or loam

324B—Ripon silt loam, 2 to 5 percent slopes

Setting

Landform: Lake plains and outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Ripon and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that are underlain by sandy and gravelly deposits
- Soils that have bedrock at a depth of less than 20 inches or more than 40 inches
- Soils that have a seasonal high water table within a depth of 6 feet

Properties and Qualities of the Ripon Soil

Parent material: Loess or other silty material and the underlying outwash over limestone and dolostone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow to moderately slow
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Available water capacity: About 7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.2 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None

Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

324C2—Ripon silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains and lake plains
Position on the landform: Backslopes and shoulders

Map Unit Composition

Ripon and similar soils: 100 percent

Soils of Minor Extent

Similar soils:
- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that are underlain by sandy and gravelly deposits
- Soils that have bedrock at a depth of less than 20 inches or more than 40 inches
- Soils that have a seasonal high water table within a depth of 6 feet

Properties and Qualities of the Ripon Soil

Parent material: Loess or other silty material and the underlying outwash over limestone and dolostone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow to moderately slow
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Available water capacity: About 6.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Rodman Series

Taxonomic classification: Sandy-skeletal, mixed, mesic Typic Hapludolls

Typical Pedon

Rodman gravelly loam, in an area of Casco-Rodman complex, 20 to 30 percent slopes; at an elevation of 750 feet; 500 feet south and 2,600 feet east of the northwest corner of sec. 7, T. 44 N., R. 9 E.; McHenry County, Illinois; USGS Wauconda topographic quadrangle; lat. 42 degrees 18 minutes 45 seconds N. and long. 88 degrees 13 minutes 43 seconds W., NAD 27; UTM Zone 16T, 0398741 easting and 4685207 northing, NAD 83:

A—0 to 11 inches; very dark gray (10YR 3/1) gravelly loam, dark grayish brown (10YR 4/2) dry; strong fine and medium granular structure; friable; many very fine and fine roots; 17 percent gravel; neutral; clear wavy boundary.

Bw—11 to 14 inches; 50 percent dark brown (10YR 3/3) and 50 percent brown (10YR 4/3) gravelly loam; weak fine granular structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; 25 percent gravel; strongly effervescent; slightly alkaline; abrupt wavy boundary.

C—14 to 60 inches; dark yellowish brown (10YR 4/4) very gravelly sand and very gravelly loamy sand; single grain; loose; common very fine roots; 50 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the dark surface layer: 6 to 15 inches
Depth to carbonates: 10 to 20 inches
Depth to the base of soil development: 10 to 20 inches

A horizon:
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—1 or 2
Texture—gravelly loam
Content of gravel—15 to 25 percent

Bw horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—1 to 3
Texture—loam or sandy loam or the gravelly analogs of these textures
Content of gravel—15 to 35 percent

C horizon:
Hue—10YR
Value—3 to 6
Chroma—1 to 4
Texture—the very gravelly or extremely gravelly analogs of loamy sand, sand, loamy coarse sand, or coarse sand
Content of gravel—35 to 70 percent

969E2—Casco-Rodman complex, 12 to 20 percent slopes, eroded

Setting

Landform: Kames, outwash plains, end moraines, and stream terraces
Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 50 percent
Rodman and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are slightly eroded
- Soils that have sandy and gravelly outwash at a depth of more than 20 inches
- Soils that have carbonates at or near the surface
- Soils that have till in the lower part of the profile
- Soils that have slopes of less than 12 percent or more than 20 percent

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes
- Soils that are severely eroded

Properties and Qualities of the Casco Soil

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 4.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 2.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Low

Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: High
Susceptibility to wind erosion: Negligible

Interpretive Groups

Land capability classification: Casco—6e; Rodman—6s
Prime farmland category: Not prime farmland
Hydric soil status: Casco—not hydric; Rodman—not hydric

969F—Casco-Rodman complex, 20 to 30 percent slopes

Setting

Landform: Outwash plains, kames, stream terraces, and end moraines
Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 50 percent
Rodman and similar soils: 40 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have sandy and gravelly outwash at a depth of more than 20 inches
- Soils that have carbonates at or near the surface
- Soils that have till in the lower part of the profile
- Soils that have slopes of less than 20 percent or more than 30 percent

Dissimilar soils:
- Severely eroded soils on shoulders and backslopes
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Casco Soil

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits
Drainage class: Somewhat excessively drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 3.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 2.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Negligible

Interpretive Groups

Land capability classification: Casco—7e; Rodman—7s
Prime farmland category: Not prime farmland
Hydric soil status: Casco—not hydric; Rodman—not hydric

Rush Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Rush silt loam, 0 to 2 percent slopes; at an elevation of 712 feet; 175 feet south and 470 feet west of the northeast corner of sec. 15, T. 39 N., R. 8 E.; Kane County, Illinois; USGS Aurora North topographic quadrangle; lat. 41 degrees 52 minutes 08 seconds N. and long. 88 degrees 18 minutes 13 seconds W., NAD 27; UTM Zone 16T, 0391822 easting and 4636036 northing, NAD 83:

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, brown (10YR 5/3) dry; weak very fine granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.

E—4 to 11 inches; 60 percent dark grayish brown (10YR 4/2) and 40 percent brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure; friable; common very fine roots; strongly acid; abrupt smooth boundary.

Bt1—11 to 18 inches; 55 percent brown (10YR 4/3) and 45 percent dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine subangular blocky structure; friable; common very fine roots; few distinct dark brown (10YR 3/3) clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—18 to 24 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—24 to 32 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt4—32 to 38 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate coarse subangular blocky structure; firm; few very fine roots; few distinct brown

(10YR 4/3) and dark brown (10YR 3/3) clay films on faces of peds; slightly acid; abrupt smooth boundary.

2Bt5—38 to 45 inches; dark yellowish brown (10YR 4/4) clay loam; weak coarse subangular blocky structure; firm; few very fine roots; common distinct dark brown (10YR 3/3) clay films on faces of peds; 12 percent gravel; slightly acid; abrupt smooth boundary.

3C—45 to 60 inches; yellowish brown (10YR 5/4) gravelly sand; single grain; loose; 25 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: 24 to 40 inches
Depth to sandy and gravelly deposits: 40 to 60 inches
Depth to carbonates: 40 to 60 inches
Depth to the base of soil development: 40 to 70 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—clay loam, loam, or sandy clay loam or the gravelly analogs of these textures
Content of gravel—less than 20 percent

3C horizon:
Hue—10YR
Value—5 or 6
Chroma—2 to 4
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand; stratified in most pedons
Content of gravel—15 to 75 percent

791A—Rush silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Map Unit Composition

Rush and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 6 feet
- Soils that have a thicker and darker surface layer
- Soils that have less gravel in the lower part of the profile
- Soils that have sandy or gravelly deposits at a depth of less than 40 inches or more than 60 inches
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Rush Soil

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

791B—Rush silt loam, 2 to 4 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Rush and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 6 feet

- Soils that have sandy or gravelly deposits at a depth of less than 40 inches or more than 60 inches
- Soils that have a thicker and darker surface layer
- Soils that have less gravel in the lower part of the profile
- Soils that have slopes of less than 2 percent or more than 4 percent

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Rush Soil

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Sawmill Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded; at an elevation of 636 feet; 1,350 feet south and 140 feet west of the northeast corner of sec. 31, T. 30 N., R. 3 E.; Livingston County, Illinois; USGS Long Point topographic quadrangle; lat. 41 degrees 01 minute 36 seconds N. and long. 88 degrees 54 minutes 43 seconds W., NAD 27; UTM Zone 16T, 0339248 easting and 4543492 northing, NAD 83:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; abrupt smooth boundary.
A1—9 to 17 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.
A2—17 to 24 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate medium granular; friable; few very fine roots; 1 percent gravel; neutral; clear smooth boundary.

A3—24 to 29 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine angular blocky; friable; few very fine roots; 1 percent gravel; neutral; clear smooth boundary.

Bg1—29 to 36 inches; dark gray (5Y 4/1) silty clay loam; weak medium prismatic structure; firm; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

Bg2—36 to 41 inches; dark gray (5Y 4/1) silty clay loam; weak medium prismatic structure; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; few fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; clear smooth boundary.

BCg—41 to 48 inches; dark gray (5Y 4/1) silty clay loam; very weak medium prismatic structure; firm; few very fine roots; few fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; few fine prominent yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; common fine distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; 1 percent gravel; neutral; abrupt smooth boundary.

Cg—48 to 60 inches; 60 percent gray (10YR 5/1) and 40 percent brownish yellow (10YR 6/6) silt loam; massive; firm; few fine black (10YR 2/1) very weakly cemented iron-manganese concretions throughout; 1 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Depth to carbonates: More than 48 inches
Depth to the base of soil development: 36 to 60 inches

Ap and/or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2, 2.5, or 3
Chroma—0 to 2
Texture—silty clay loam

Bg and/or BCg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam, silt loam, or clay loam or stratified with these textures
Content of gravel—less than 10 percent

3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thinner subsurface layer
- Soils that have less clay and more silt in the control section
- Soils that are overlain by light-colored recent deposits
- Soils that have more gravel in the lower part of the profile

Dissimilar soils:
- Somewhat poorly drained soils in the slightly higher positions on flood plains
- The poorly drained, calcareous Millington soils on flood plains

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 7 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

Saybrook Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Saybrook soils in map units 145B2 and 145C2 have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the

soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs.

Typical Pedon

Saybrook silt loam, 2 to 5 percent slopes; at an elevation of 698 feet; 2,500 feet south and 1,300 feet east of the northwest corner of sec. 3, T. 16 N., R. 7 E.; Bureau County, Illinois; USGS Manlius topographic quadrangle; lat. 41 degrees 24 minutes 07.2 seconds N. and long. 89 degrees 40 minutes 48.8 seconds W., NAD 27; UTM Zone 16T, 0275954 easting and 4586851 northing, NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.

AB—10 to 15 inches; very dark brown (10YR 2/2) and brown (10YR 4/3) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure; friable; neutral; clear wavy boundary.

Bt1—15 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct very dark brown (10YR 2/2) organo-clay films on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear wavy boundary.

Bt2—21 to 26 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear wavy boundary.

Bt3—26 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; common prominent irregular black (7.5YR 2.5/1) extremely weakly cemented iron-manganese accumulations throughout; slightly acid; clear wavy boundary.

Bt4—30 to 32 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; common prominent irregular black (7.5YR 2.5/1) extremely weakly cemented iron-manganese accumulations throughout; neutral; clear wavy boundary.

2Bt5—32 to 36 inches; brown (7.5YR 4/4) clay loam; weak medium subangular blocky structure; friable; few distinct brown (7.5YR 4/3) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; common distinct irregular black (7.5YR 2.5/1) extremely weakly cemented iron-manganese accumulations throughout; slightly effervescent; slightly alkaline; clear wavy boundary.

2C—36 to 60 inches; brown (7.5YR 4/4) loam; massive; friable; many medium prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; many medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; common distinct irregular black (7.5YR 2.5/1) extremely weakly cemented iron-manganese accumulations throughout; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the dark surface layer: 7 to 20 inches
Thickness of the loess or other silty material: 20 to 40 inches
Depth to the base of the argillic horizon: 24 to 40 inches
Depth to carbonates: Less than 40 inches

Ap, A, and/or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 6
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—clay loam or silty clay loam
Content of gravel—less than 15 percent

2C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—loam, silty clay loam, or silt loam
Content of gravel—less than 15 percent

145A—Saybrook silt loam, 0 to 2 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Summits

Map Unit Composition

Saybrook and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have till of silt loam or silty clay loam instead of loam
- Soils that have more clay and less sand in the upper and middle parts of the profile
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Saybrook Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate

Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

145B—Saybrook silt loam, 2 to 5 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and summits

Map Unit Composition

Saybrook and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have till of silt loam or silty clay loam instead of loam
- Soils that have more clay and less sand in the upper and middle parts of the profile
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that are moderately eroded

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes

Properties and Qualities of the Saybrook Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

145B2—Saybrook silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and summits

Map Unit Composition

Saybrook and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have till of silt loam or silty clay loam instead of loam
- Soils that have more clay and less sand in the upper and middle parts of the profile
- Soils that have slopes of less than 2 percent or more than 5 percent
- Soils that are slightly eroded

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Saybrook Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

145C2—Saybrook silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Saybrook and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silt loam or silty clay loam instead of loam
- Soils that have more clay and less sand in the upper and middle parts of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 5 percent or more than 10 percent

Dissimilar soils:
- The poorly drained Elpaso soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Saybrook Soil

Parent material: Loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.5 to 3.5 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Somonauk Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Somonauk silt loam, 0 to 2 percent slopes; at an elevation of 822 feet; 700 feet south and 2,400 feet west of the northeast corner of sec. 25, T. 41 N., R. 4 E.; De Kalb County, Illinois; USGS Genoa topographic quadrangle; lat. 42 degrees 00 minutes 26 seconds N. and long. 88 degrees 43 minutes 24 seconds W., NAD 27; UTM Zone 16T, 0357276 easting and 4652019 northing, NAD 83:

Ap—0 to 4 inches; 85 percent dark grayish brown (10YR 4/2) and 15 percent dark brown (10YR 3/3) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium granular structure; friable; common very fine and fine roots; neutral; gradual wavy boundary.

E—4 to 9 inches; 80 percent dark grayish brown (10YR 4/2) and 20 percent brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; weak medium and thick platy structure; friable; common very fine and fine roots; neutral; clear smooth boundary.

Bt1—9 to 14 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots; many distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; common fine rounded black (10YR 2/1) iron-manganese nodules throughout; moderately acid; gradual wavy boundary.

Bt2—14 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine and fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium rounded black (10YR 2/1) iron-manganese nodules throughout; moderately acid; gradual wavy boundary.

Bt3—21 to 29 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse prismatic structure; friable; common fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium rounded black (10YR 2/1) iron-manganese nodules throughout; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; gradual wavy boundary.

Bt4—29 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common fine rounded black (10YR 2/1) iron-manganese nodules throughout; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; gradual wavy boundary.

2Bt5—34 to 39 inches; yellowish brown (10YR 5/4) silty clay loam (13 percent sand content); moderate medium angular blocky structure; friable; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common fine rounded black (10YR 2/1) iron-manganese nodules throughout; few fine distinct grayish brown (10YR 5/2) iron depletions in the matrix; 1 percent gravel; moderately acid; gradual wavy boundary.

2Bt6—39 to 49 inches; yellowish brown (10YR 5/4) loam; moderate medium and coarse angular blocky structure; friable; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; few fine rounded black (10YR 2/1) iron-manganese nodules throughout; common fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; 6 percent gravel; moderately acid; gradual wavy boundary.

2Bt7—49 to 55 inches; brown (7.5YR 4/3) loam; weak medium and coarse angular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; few fine rounded black (10YR 2/1) iron-manganese nodules throughout; common fine prominent yellowish brown (10YR 5/8) masses of oxidized iron in the matrix; 8 percent gravel; slightly acid; clear smooth boundary.

2Bt8—55 to 61 inches; brown (7.5YR 4/3) sandy loam; weak medium angular blocky structure; friable; common distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; 10 percent gravel; slightly acid; clear smooth boundary.

2Bt9—61 to 70 inches; 60 percent dark yellowish brown (10YR 4/4) and 40 percent brown (7.5YR 4/3) sandy loam; weak medium subangular blocky structure; friable; few distinct dark brown (10YR 3/3) clay films on faces of peds and in pores; 8 percent gravel; neutral; gradual wavy boundary.

2C—70 to 80 inches; 70 percent dark yellowish brown (10YR 4/4) and 30 percent yellowish brown (10YR 5/4), stratified gravelly sandy loam and sand; massive; very friable; 15 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 42 to 75 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam

E horizon (where present):
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—loam, clay loam, silt loam, sandy loam, sandy clay loam, or silty clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified loam, sandy loam, or silt loam or the gravelly analogs of these textures with thin strata of other textures
Content of gravel—less than 20 percent

668B—Somonauk silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Somonauk and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker and darker surface layer
- Soils that have outwash at a depth of more than 40 inches
- Soils that are underlain by till
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 2 percent or more than 5 percent

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Somonauk Soil

Parent material: Loess or other silty material and the underlying outwash
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Sparta Series

Taxonomic classification: Sandy, mixed, mesic Entic Hapludolls

Typical Pedon

Sparta loamy sand, 0 to 2 percent slopes; 2,150 feet north and 1,939 feet east of the southwest corner of sec. 20, T. 23 N., R. 10 E.; Ogle County, Illinois; USGS Daysville

topographic quadrangle; lat. 41 degrees 57 minutes 58 seconds N. and long. 89 degrees 22 minutes 13 seconds W., NAD 27; UTM Zone 16T, 0303579 easting and 4648734 northing, NAD 83:

A1—0 to 10 inches; very dark gray (10YR 3/1) loamy sand, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to moderate very fine granular; very friable; many fine roots; neutral; clear smooth boundary.
A2—10 to 17 inches; very dark grayish brown (10YR 3/2) loamy sand, grayish brown (10YR 5/2) dry; very weak medium and coarse subangular blocky structure parting to moderate very fine granular; very friable; common fine roots; neutral; clear smooth boundary.
Bw1—17 to 24 inches; yellowish brown (10YR 5/4) sand; weak medium and coarse subangular blocky structure; very friable; few fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings and few faint dark brown (10YR 3/3) clay bridges between sand grains; strongly acid; clear smooth boundary.
Bw2—24 to 31 inches; brown (7.5YR 5/4) sand; weak medium and coarse subangular blocky structure; very friable; few fine roots; moderately acid; clear smooth boundary.
C—31 to 60 inches; reddish yellow (7.5YR 6/6) sand; single grain; loose; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to carbonates: More than 80 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—1 or 2
Texture—loamy sand

AB horizon (where present):
Hue—7.5YR or 10YR
Value—3
Chroma—2 or 3
Texture—loamy sand

Bw horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture—sand, fine sand, or loamy sand

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—sand or stratified sand to loamy sand

88D—Sparta loamy sand, 6 to 12 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Shoulders and backslopes

Map Unit Composition

Sparta and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have less sand and more clay in the lower part of the profile
- Soils that have slopes of less than 6 percent or more than 12 percent

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Sparta Soil

Parent material: Sandy outwash and/or eolian sands
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Potential for frost action: Low
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 6s
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

St. Charles Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

St. Charles silt loam, 2 to 5 percent slopes; at an elevation of 635 feet; 80 feet north and 2,170 feet west of the southeast corner of sec. 26, T. 16 N., R. 8 E.; Bureau County, Illinois; USGS Wyanet topographic quadrangle: lat. 41 degrees 20 minutes 09 seconds N. and long. 89 degrees 32 minutes 12 seconds W., NAD 27; UTM Zone 16T, 0287740 easting and 4579143 northing, NAD 83:

Ap—0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; few fine roots; moderately acid; abrupt smooth boundary.

Bt1—8 to 15 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; many faint dark brown (10YR 3/3) organic coatings and dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—15 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—21 to 34 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine rounded dark extremely weakly cemented iron-manganese accumulations throughout; moderately acid; clear smooth boundary.

Bt4—34 to 44 inches; yellowish brown (10YR 5/4) silt loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; many faint dark yellowish brown (10YR 4/4) clay films and many distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium distinct brown (7.5YR 4/4) masses of oxidized iron-manganese in the matrix; moderately acid; clear smooth boundary.

Bt5—44 to 50 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; many distinct dark yellowish brown (10YR 4/4) clay films and light gray (10YR 7/2) (dry) silt coatings on faces of peds; few fine distinct strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.

2Bt6—50 to 57 inches; yellowish brown (10YR 5/6), stratified loam, sandy loam, and silt loam; weak medium subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2C—57 to 60 inches; yellowish brown (10YR 5/4), stratified loam and silt loam; massive; friable; moderately acid.

Range in Characteristics

Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: More than 44 inches
Depth to the base of soil development: 44 to 70 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam

E horizon (where present):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt and/or 2BC horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified loam, sandy loam, clay loam, or silt loam

2C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified loam, sandy loam, or silt loam

243C2—St. Charles silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Shoulders and backslopes

Map Unit Composition

St. Charles and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that are slightly eroded
- Soils that have till in the lower part of the profile

Dissimilar soils:
- Soils that are severely eroded

Properties and Qualities of the St. Charles Soil

Parent material: Loess over outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Strawn Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs
Taxadjunct features: The Strawn soils in this survey area have redoximorphic features above a depth of 40 inches. This difference, however, does not significantly affect

the use and management of the soils. These soils are classified as fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs.

Typical Pedon

Strawn loam, 10 to 18 percent slopes; at an elevation of 630 feet; 194 feet north and 96 feet west of the southeast corner of sec. 17, T. 22 N., R. 22 W.; Tazewell County, Illinois; USGS Armington topographic quadrangle; lat. 40 degrees 21 minutes 28 seconds N. and long. 89 degrees 20 minutes 56 seconds W., NAD 27; UTM Zone 16T, 0300533 easting and 4470121 northing, NAD 83:

Ap—0 to 7 inches; brown (10YR 4/3 and 5/3) loam, pale brown (10YR 6/3) and very pale brown (10YR 7/3) dry; weak fine and medium granular structure; friable; common fine roots; 2 percent pebbles; neutral; abrupt smooth boundary.

Bt1—7 to 11 inches; brown (10YR 4/3) clay loam; moderate fine subangular blocky structure; firm; few fine roots; many faint brown (10YR 4/3) clay films on faces of peds; 3 percent pebbles; neutral; clear smooth boundary.

Bt2—11 to 22 inches; brown (10YR 4/3) clay loam; moderate medium subangular blocky structure; firm; few fine roots; many faint brown (10YR 4/3) clay films on faces of peds; 4 percent pebbles; neutral; clear smooth boundary.

C—22 to 60 inches; brown (10YR 5/3) loam; massive; firm; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; 5 percent pebbles; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 14 to 24 inches
Depth to the base of the argillic horizon: 16 to 24 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—loam or silt loam; silty clay loam or clay loam in eroded areas
Content of gravel—less than 7 percent

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—clay loam, silty clay loam, silt loam, or loam
Content of gravel—3 to 15 percent

C horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—2 to 6
Texture— loam, clay loam, silty clay loam, or silt loam
Content of gravel—3 to 15 percent

224C2—Strawn silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Strawn and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silt loam or silty clay loam instead of loam
- Soils that have more clay and less sand throughout the profile
- Soils that have till at a depth of more than 24 inches
- Soils that are not eroded or are only slightly eroded
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- Calcareous, moderately well drained soils on backslopes

Properties and Qualities of the Strawn Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

224C3—Strawn clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Strawn and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silt loam or silty clay loam instead of loam
- Soils that have more clay and less sand throughout the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have till at a depth of more than 24 inches
- Soils that have slopes of less than 5 percent or more than 10 percent

Dissimilar soils:
- Calcareous, moderately well drained soils on backslopes

Properties and Qualities of the Strawn Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

224D2—Strawn silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Strawn and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silt loam or silty clay loam instead of loam
- Soils that have more clay and less sand throughout the profile
- Soils that have till at a depth of more than 24 inches

- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 10 percent or more than 18 percent

Dissimilar soils:
- Calcareous, moderately well drained soils on backslopes

Properties and Qualities of the Strawn Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

224D3—Strawn clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes

Map Unit Composition

Strawn and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silt loam or silty clay loam instead of loam
- Soils that have more clay and less sand throughout the profile
- Soils that have till at a depth of more than 24 inches
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 10 percent or more than 18 percent

Dissimilar soils:
- Calcareous, moderately well drained soils on backslopes

Properties and Qualities of the Strawn Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

224F2—Strawn silt loam, 18 to 35 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes

Map Unit Composition

Strawn and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have till of silt loam or silty clay loam instead of loam
- Soils that have more clay and less sand throughout the profile
- Soils that are underlain by outwash or gravelly outwash
- Soils that have till at a depth of more than 24 inches
- Soils that have a seasonal high water table at a depth of more than 3.5 feet

Dissimilar soils:
- Calcareous, moderately well drained soils on backslopes

Properties and Qualities of the Strawn Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Sunbury Series

Taxonomic classification: Fine, smectitic, mesic Aquollic Hapludalfs

Typical Pedon

Sunbury silt loam, 0 to 2 percent slopes; at an elevation of 680 feet; 1,270 feet north and 1,410 feet east of the southwest corner of sec. 19, T. 16 N., R. 7 E.; Douglas County, Illinois; USGS Atwood topographic quadrangle; lat. 39 degrees 49 minutes 27.3 seconds N. and long. 88 degrees 27 minutes 25.9 seconds W., NAD 27; UTM Zone 16S, 0375297 easting and 4409269 northing, NAD 83:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.
E—8 to 12 inches; brown (10YR 5/3) silt loam; moderate thin and medium platy structure parting to moderate fine granular; friable; common very fine roots; moderately acid; clear smooth boundary.
BE—12 to 15 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; common very fine and fine roots; many distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; moderately acid; clear smooth boundary.
Bt1—15 to 25 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common very fine and fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few medium black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; common fine faint dark grayish brown (10YR 4/2) iron depletions in the matrix; few fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.
Bt2—25 to 36 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium and coarse subangular blocky; firm; common fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few medium black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; few medium distinct dark gray (10YR 4/1) iron depletions in the matrix; common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.

Bt3—36 to 43 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to weak coarse subangular blocky; friable; few very fine and fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common medium black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; common medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; many medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; slightly alkaline; clear smooth boundary.

2Btg—43 to 47 inches; grayish brown (10YR 5/2) loam; weak coarse subangular blocky structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; few fine and medium black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 1 percent fine gravel; slightly alkaline; abrupt smooth boundary.

2C—47 to 72 inches; 50 percent grayish brown (10YR 5/2) and 50 percent yellowish brown (10YR 5/6) loam; massive; firm; common fine and medium white (10YR 8/1) weakly cemented calcium carbonate nodules throughout; few fine and medium black (7.5YR 2.5/1) weakly cemented iron-manganese nodules throughout; 3 percent fine gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: 45 to 60 inches

Ap or A horizon:
Hue—10YR or 2.5Y
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam

BE horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam or silty clay loam

Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay

2Btg or 2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam or silt loam
Content of gravel—less than 5 percent

2C or 2Cg horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—1 to 8
Texture—loam
Content of gravel—less than 5 percent

234A—Sunbury silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and footslopes

Map Unit Composition

Sunbury and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that have a thicker surface layer
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have outwash in the lower part of the profile
- Soils that have slopes of more than 2 percent
- Soils that have till at a depth of more than 60 inches

Dissimilar soils:
- The poorly drained Drummer and Elpaso soils on toeslopes

Properties and Qualities of the Sunbury Soil

Parent material: Loess over till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: High
Depth and months of highest apparent seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Swygert Series

Taxonomic classification: Fine, mixed, active, mesic Aquic Argiudolls
Taxadjunct features: The Swygert soils in map units 91B2 and 91C2 have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine, mixed, active, mesic Aquollic Hapludalfs.

Typical Pedon

Swygert silty clay loam, 0 to 2 percent slopes; at an elevation of 675 feet; 339 feet south and 66 feet east of the northwest corner of sec. 7, T. 25 N., R. 13 W.; Iroquois County, Illinois; USGS Onarga East topographic quadrangle; lat. 40 degrees 38 minutes 36 seconds N. and long. 87 degrees 53 minutes 04 seconds W., NAD 27; UTM Zone 16T, 0425215 easting and 4499540 northing, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine granular structure; friable; many fine roots; slightly acid; abrupt wavy boundary.

A—7 to 12 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak medium angular blocky structure parting to weak fine subangular blocky; friable; many fine roots; common black (N 2.5/) krotovinas; slightly acid; abrupt smooth boundary.

Bt1—12 to 18 inches; very dark grayish brown (10YR 3/2) silty clay, gray (10YR 5/1) dry; moderate fine subangular blocky structure; friable; many fine roots; many distinct black (10YR 2/1) and very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (10YR 2/1) iron-manganese concretions throughout; common fine faint brown (10YR 4/3) masses of oxidized iron and manganese in the matrix; slightly acid; clear wavy boundary.

Bt2—18 to 26 inches; brown (10YR 4/3) silty clay; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; many distinct very dark grayish brown (10YR 3/2) organo-clay films and dark grayish brown (10YR 4/2) clay films on faces of peds; common fine prominent strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; few fine distinct olive gray (5Y 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Bt3—26 to 31 inches; yellowish brown (10YR 5/4) silty clay; moderate medium prismatic structure parting to weak medium and fine angular blocky; firm; common fine roots; common distinct very dark gray (10YR 3/1) organo-clay films in root channels; common very dark gray (10YR 3/1) krotovinas; common distinct dark gray (10YR 4/1) and gray (10YR 5/1) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; common fine prominent gray (5Y 5/1) iron depletions in the matrix; slightly effervescent (7 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.

2Bt4—31 to 41 inches; light olive brown (2.5Y 5/4) silty clay; moderate medium prismatic structure parting to weak coarse angular blocky; very firm; few fine roots; common prominent very dark gray (10YR 3/1) organo-clay films and gray (5Y 5/1) clay films on faces of peds; common medium prominent gray (5Y 5/1) iron depletions in the matrix; slightly effervescent (16 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.

2Bt5—41 to 51 inches; light olive brown (2.5Y 5/4) silty clay; weak coarse prismatic structure; very firm; few fine roots; common distinct very dark gray (5Y 3/1) organo-clay films in root channels; many distinct dark gray (5Y 4/1) clay films on faces of peds; common fine black (10YR 2/1) iron-manganese concretions throughout; few fine distinct olive (5Y 5/6) and few fine prominent strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; common fine prominent gray

(5Y 5/1) iron depletions in the matrix; strongly effervescent (18 percent calcium carbonate equivalent); moderately alkaline; gradual smooth boundary.

2Cd—51 to 60 inches; brown (10YR 5/3) silty clay; massive; very firm; many distinct gray (5Y 6/1) pressure faces; common fine black (10YR 2/1) iron-manganese concretions throughout; few coarse prominent strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron in the matrix; strongly effervescent (19 percent calcium carbonate equivalent); moderately alkaline.

Range in Characteristics

Thickness of the dark surface layer: 7 to 20 inches
Depth to till: Less than 45 inches
Depth to carbonates: 20 to 50 inches
Depth to densic material: 35 to 55 inches
Depth to the base of soil development: 35 to 55 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silty clay loam

Bt and/or 2Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 6
Texture—silty clay or clay
Content of gravel—less than 8 percent

2Cd horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay, silty clay loam, or clay
Content of gravel—less than 12 percent

91A—Swygert silty clay loam, 0 to 2 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Footslopes and summits

Map Unit Composition

Swygert and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have a thinner subsurface layer
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Swygert Soil

Parent material: Thin mantle of loess or other silty material and the underlying lacustrine deposits and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 35 to 55 inches to dense material
Available water capacity: About 7.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: High
Depth and months of highest perched seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

91B—Swygert silty clay loam, 2 to 4 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Footslopes and backslopes

Map Unit Composition

Swygert and similar soils: 92 percent
Dissimilar soils: 8 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that are moderately eroded
- Soils that have slopes of less than 2 percent or more than 4 percent

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes

Properties and Qualities of the Swygert Soil

Parent material: Thin mantle of loess or other silty material and the underlying lacustrine deposits and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 35 to 55 inches to dense material
Available water capacity: About 7.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent

Shrink-swell potential: High
Depth and months of highest perched seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

91B2—Swygert silty clay loam, 2 to 4 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Footslopes and backslopes

Map Unit Composition

Swygert and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that are slightly eroded
- Soils that have slopes of less than 2 percent or more than 4 percent

Dissimilar soils:
- The poorly drained Bryce soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Swygert Soil

Parent material: Thin mantle of loess or other silty material and the underlying lacustrine deposits and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 35 to 55 inches to dense material
Available water capacity: About 7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: High
Depth and months of highest perched seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

91C2—Swygert silty clay loam, 4 to 6 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Swygert and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that are slightly eroded
- Soils that have a seasonal high water table at a depth of more than 2 feet
- Soils that have slopes of less than 4 percent or more than 6 percent

Dissimilar soils:
- Moderately well drained, calcareous soils on backslopes
- The poorly drained Bryce soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Swygert Soil

Parent material: Thin mantle of loess or other silty material and the underlying lacustrine deposits and till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 35 to 55 inches to dense material
Available water capacity: About 6.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: High
Depth and months of highest perched seasonal high water table: 1 to 2 feet, January through May
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Symerton Series

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Oxyaquic Argiudolls
Taxadjunct features: The Symerton soil in map unit 294C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, superactive, mesic Mollic Oxyaquic Hapludalf.

Typical Pedon

Symerton silt loam, 2 to 5 percent slopes; at an elevation of 714 feet; 102 feet north and 1,806 feet west of the southeast corner of sec. 33, T. 24 N., R. 12 W.; Iroquois County, Illinois; USGS Hoopeston topographic quadrangle; lat. 40 degrees 29 minutes 17 seconds N. and long. 87 degrees 42 minutes 58 seconds W., NAD 27; UTM Zone 16T, 0439310 easting and 4482181 northing, NAD 83:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; weak very fine granular structure; friable; slightly acid; abrupt smooth boundary.
A—10 to 15 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine granular structure; friable; moderately acid; clear smooth boundary.
AB—15 to 19 inches; very dark grayish brown (10YR 3/2) silty clay loam, dark grayish brown (10YR 4/2) dry; moderate very fine granular structure; friable; many distinct black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.
2Bt1—19 to 25 inches; brown (10YR 4/3) gravelly clay loam; moderate very fine subangular blocky structure; firm; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron-manganese nodules throughout; about 18 percent gravel; moderately acid; clear smooth boundary.
2Bt2—25 to 31 inches; brown (10YR 4/3) gravelly clay loam; moderate fine subangular blocky structure; firm; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron-manganese nodules throughout; about 18 percent gravel; neutral; clear smooth boundary.
2Bt3—31 to 35 inches; yellowish brown (10YR 5/4) gravelly loam; weak fine and medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; common fine black (10YR 2/1) very weakly cemented iron-manganese nodules throughout; few fine prominent yellowish red (5YR 5/8) masses of oxidized iron in the matrix; about 18 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.
3Bt4—35 to 39 inches; brown (10YR 5/3) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; few distinct brown (10YR 4/3) clay films on faces of peds; few fine prominent yellowish red (5YR 5/8) masses of oxidized iron in the matrix; slightly effervescent; slightly alkaline; clear smooth boundary.
3C—39 to 60 inches; light olive brown (2.5Y 5/4) and light yellowish brown (2.5Y 6/4) silt loam; massive; firm; few fine prominent yellowish red (5YR 4/6) masses of oxidized iron in the matrix; few fine prominent gray (10YR 5/1) iron depletions in the matrix; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the dark surface layer: 7 to 20 inches
Thickness of the loess or other silty material: Less than 24 inches
Depth to till: 22 to 50 inches
Depth to carbonates: 24 to 55 inches
Depth to the base of soil development: 30 to 50 inches

Ap, A, and/or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or silty clay loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—clay loam, loam, gravelly clay loam, or gravelly loam
Content of gravel—less than 20 percent

3Bt and/or 3BC horizons
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam
Content of gravel—less than 7 percent

3C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam
Content of gravel—less than 7 percent

294B—Symerton silt loam, 2 to 5 percent slopes

Setting

Landform: Lake plains and ground moraines
Position on the landform: Summits and backslopes

Map Unit Composition

Symerton and similar soils: 88 percent
Dissimilar soils: 12 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the upper one-half of the profile
- Soils that have slopes of more than 5 percent
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

294C2—Symerton silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and lake plains
Position on the landform: Backslopes and shoulders

Map Unit Composition

Symerton and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less sand and more clay in the upper one-half of the profile

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Symerton Soil

Parent material: Thin mantle of loess or other silty material and the underlying outwash and till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate

Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Thorp Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon

Thorp silt loam, 0 to 2 percent slopes; at an elevation of 640 feet; 1,190 feet north and 24 feet west of the southeast corner of sec. 27, T. 36 N., R. 5 E.; La Salle County, Illinois; USGS Sheridan topographic quadrangle; lat. 41 degrees 33 minutes 42 seconds N. and long. 88 degrees 38 minutes 49 seconds W., NAD 27; UTM Zone 16T, 0362665 easting and 4602414 northing, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate very fine granular structure; friable; neutral; abrupt smooth boundary.
A—7 to 14 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.
Eg—14 to 19 inches; dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; weak fine granular structure; friable; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.
Btg1—19 to 21 inches; dark gray (10YR 4/1) and dark grayish brown (2.5Y 4/2) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; firm; many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.
Btg2—21 to 33 inches; gray (5Y 5/1) and olive gray (5Y 4/2) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds; many fine prominent yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.
Btg3—33 to 43 inches; grayish brown (2.5Y 5/2) silty clay loam; weak fine prismatic structure parting to moderate fine angular and subangular blocky; firm; many distinct very dark gray (10YR 3/1) organo-clay films and dark gray (N 4/) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) and distinct light yellowish brown (2.5Y 6/4) masses of oxidized iron in the matrix; slightly acid; clear smooth boundary.
2Btg4—43 to 50 inches; grayish brown (10YR 5/2) and yellowish brown (10YR 5/6) sandy clay loam; weak coarse subangular blocky structure; friable; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; neutral; clear smooth boundary.

2Cg—50 to 65 inches; grayish brown (10YR 5/2) and yellowish brown (10YR 5/8) sandy loam with thin strata of sand; massive; friable in the sandy loam and loose in the sand; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 14 inches
Thickness of the loess: 30 to 54 inches
Depth to carbonates: More than 40 inches
Depth to the base of soil development: 40 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silt loam

2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 6
Texture—clay loam, loam, or sandy clay loam
Content of gravel—less than 10 percent

2Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 8
Texture—loam or sandy loam with strata of loamy sand or sand
Content of gravel—less than 15 percent

206A—Thorp silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Toeslopes

Map Unit Composition

Thorp and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer

- Soils that are overlain by light-colored recent deposits
- Soils that have a thicker surface layer

Dissimilar soils:
- The somewhat poorly drained Brenton soils on summits

Properties and Qualities of the Thorp Soil

Parent material: Loess over stratified loamy outwash
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 4 to 6 percent
Shrink-swell potential: Moderate
Depth and months of highest apparent seasonal high water table: At the surface to 1 foot below the surface, January through May
Depth and months of deepest ponding: 0.0 to 0.5 foot above the surface, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Varna Series

Taxonomic classification: Fine, illitic, mesic Oxyaquic Argiudolls
Taxadjunct features: The Varna soils in map units 223B2, 223C2, 223C3, and 223D3 have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. The Varna soils in map units 223B2 and 223C2 are classified as fine, illitic, mesic Mollic Oxyaquic Hapludalfs. The Varna soils in map units 223C3 and 223D3 are classified as fine, illitic, mesic Oxyaquic Hapludalfs.

Typical Pedon

Varna silt loam, 2 to 4 percent slopes; at an elevation of 722 feet; 35 feet north and 860 feet east of the southwest corner of sec. 6, T. 29 N., R. 11 E.; Kankakee County, Illinois; USGS Herscher topographic quadrangle; lat. 41 degrees 00 minutes 53 seconds N. and long. 88 degrees 00 minutes 49 seconds W., NAD 27; UTM Zone 16T, 0414761 easting and 4540891 northing, NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; neutral; abrupt smooth boundary.
A—8 to 12 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; slightly acid; clear smooth boundary.
2Bt1—12 to 18 inches; brown (10YR 4/3) silty clay loam; moderate very fine subangular blocky structure; firm; many distinct very dark gray (10YR 3/1)

organo-clay films on faces of peds; 5 percent fine gravel; moderately acid; clear smooth boundary.

2Bt2—18 to 24 inches; dark yellowish brown (10YR 4/4) silty clay; weak fine prismatic structure parting to moderate very fine and fine subangular blocky; firm; many distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 5 percent fine gravel; moderately acid; clear smooth boundary.

2Bt3—24 to 30 inches; light olive brown (2.5Y 5/4) silty clay; weak fine prismatic structure parting to moderate fine angular and subangular blocky; firm; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many fine distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; 5 percent fine gravel; neutral; clear wavy boundary.

2Bt4—30 to 42 inches; 60 percent yellowish brown (10YR 5/6) and 40 percent grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium angular and subangular blocky; firm; few distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; 5 percent fine gravel; slightly effervescent; slightly alkaline; gradual smooth boundary.

2BCt—42 to 48 inches; 50 percent yellowish brown (10YR 5/6) and 50 percent gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak medium subangular and angular blocky; firm; few distinct dark grayish brown (10YR 4/2) clay films on vertical faces of peds; 2 percent fine gravel; slightly effervescent; moderately alkaline; gradual wavy boundary.

2Cd—48 to 60 inches; 90 percent yellowish brown (10YR 5/4 and 5/6) and 10 percent gray (5Y 5/1) silty clay loam; massive; very firm; 5 percent fine gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the dark surface layer: 6 to 16 inches
Thickness of the loess or other silty material: Less than 18 inches
Depth to carbonates: 24 to 42 inches
Depth to densic material: 24 to 60 inches
Depth to the base of soil development: 24 to 60 inches

Ap and A horizons:
Hue—10YR
Value—2 or 3; ranges to 4 in severely eroded pedons
Chroma—1 or 2; ranges to 4 in severely eroded pedons
Texture—silt loam or silty clay loam

2Bt horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam, silty clay, or clay
Content of gravel—less than 10 percent

2BC and/or 2Cd horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or clay loam
Content of gravel—less than 10 percent

223B—Varna silt loam, 2 to 4 percent slopes

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and summits

Map Unit Composition

Varna and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have less clay and more silt in the upper part of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that have outwash above the till

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Varna Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 24 to 60 inches to dense material
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.5 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

223B2—Varna silt loam, 2 to 4 percent slopes, eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes and summits

Map Unit Composition

Varna and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay and more silt in the upper part of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 2 percent or more than 4 percent
- Soils that have outwash above the till

Dissimilar soils:
- The poorly drained Ashkum soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Varna Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 24 to 60 inches to dense material
Available water capacity: About 7.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

223C2—Varna silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Varna and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have less clay and more silt in the upper part of the profile
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have outwash above the till

Dissimilar soils:
- Moderately well drained, calcareous soils on backslopes
- The poorly drained Ashkum soils on toeslopes
- Soils that are severely eroded

Properties and Qualities of the Varna Soil

Parent material: Thin mantle of loess or other silty material and the underlying till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 24 to 60 inches to dense material
Available water capacity: About 8.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

223C3—Varna silty clay loam, 4 to 6 percent slopes, severely eroded

Setting

Landform: Ground moraines and end moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Varna and similar soils: 94 percent
Dissimilar soils: 6 percent

Soils of Minor Extent

Similar soils:
- Soils that are moderately eroded

- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 4 percent or more than 6 percent
- Soils that have outwash above the till

Dissimilar soils:
- Calcareous, moderately well drained soils on backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Varna Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 18 to 36 inches to dense material
Available water capacity: About 6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

223D3—Varna silty clay loam, 6 to 12 percent slopes, severely eroded

Setting

Landform: End moraines and ground moraines
Position on the landform: Backslopes

Map Unit Composition

Varna and similar soils: 95 percent
Dissimilar soils: 5 percent

Soils of Minor Extent

Similar soils:
- Soils that are moderately eroded
- Soils that have a seasonal high water table at a depth of less than 2.0 feet or more than 3.5 feet
- Soils that have slopes of less than 6 percent or more than 12 percent
- Soils that have outwash above the till

Dissimilar soils:
- Calcareous, moderately well drained soils on backslopes
- The poorly drained Ashkum soils on toeslopes

Properties and Qualities of the Varna Soil

Parent material: Till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow
Depth to restrictive feature: 18 to 36 inches to dense material
Available water capacity: About 6.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of highest perched seasonal high water table: 2.0 to 3.5 feet, February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Virgil Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon

Virgil silt loam, 0 to 2 percent slopes; at an elevation of 765 feet; 300 feet south and 1,346 feet east of the northwest corner of sec. 8, T. 26 N., R. 8 E.; Stephenson County, Illinois; USGS Freeport East topographic quadrangle; lat. 42 degrees 16 minutes 21 seconds N. and long. 89 degrees 36 minutes 23 seconds W., NAD 27; UTM Zone 16T, 0285052 easting and 4683325 northing, NAD 83:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

Eg—7 to 13 inches; dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) silt loam, light brownish gray (10YR 6/2) dry; weak thin platy structure parting to moderate fine granular; friable; many fine roots; few faint black (10YR 2/1) organic coatings on faces of peds and fillings in root channels; few fine distinct brown (7.5YR 4/4) masses of oxidized iron and manganese in the matrix; strongly acid; clear smooth boundary.

Bt1—13 to 17 inches; grayish brown (10YR 5/2) and brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine black (10YR 2/1) iron-manganese concretions throughout; few fine distinct brown (7.5YR 4/4)

masses of oxidized iron and manganese and prominent strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; strongly acid; clear smooth boundary.

Bt2—17 to 25 inches; grayish brown (10YR 5/2) and brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; common faint dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) clay films on faces of peds; common faint light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine black (10YR 2/1) iron-manganese concretions throughout; few fine distinct brown (7.5YR 4/4) masses of oxidized iron and manganese and prominent strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; strongly acid; gradual smooth boundary.

Btg1—25 to 35 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; many faint grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; many fine black (10YR 2/1) iron-manganese concretions throughout; common fine prominent strong brown (7.5YR 5/6 and 5/8) masses of oxidized iron in the matrix; strongly acid; clear smooth boundary.

Btg2—35 to 44 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium and coarse subangular and angular blocky structure; firm; few fine roots; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; many fine black (10YR 2/1) iron-manganese nodules and concretions throughout; many medium prominent brown (7.5YR 4/4) masses of oxidized iron and manganese and strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.

Btg3—44 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium and coarse angular blocky structure; firm; few fine roots; few prominent gray (N 5/) clay films on faces of peds; many fine black (10YR 2/1) iron-manganese nodules and concretions throughout; many medium prominent brown (7.5YR 4/4) masses of oxidized iron and manganese and strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; moderately acid; clear smooth boundary.

2Btg4—49 to 58 inches; grayish brown (2.5Y 5/2) and light brownish gray (2.5Y 6/2) loam; weak coarse angular blocky structure; firm; few prominent dark gray (N 4/) clay films on faces of peds; few fine black (10YR 2/1) iron-manganese concretions throughout; many medium prominent brown (7.5YR 4/4) masses of oxidized iron and manganese and strong brown (7.5YR 5/6) masses of oxidized iron in the matrix; neutral; gradual smooth boundary.

2C—58 to 60 inches; brown (10YR 4/3) and dark yellowish brown (10YR 4/4) sandy loam; massive; friable; common fine distinct dark gray (10YR 4/1) and gray (10YR 5/1) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the loess or other silty material: 40 to 60 inches
Depth to carbonates: 45 to 70 inches
Depth to the base of soil development: 42 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR
Value—4 to 6

Chroma—1 or 2
Texture—silt loam

Bt and Btg horizons:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam

2Bt and/or 2Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam, clay loam, sandy loam, silty clay loam, or silt loam
Content of gravel—less than 7 percent

2C or 2Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—loam, sandy loam, silt loam, clay loam, or loamy sand; stratified in some pedons
Content of gravel—less than 10 percent

104A—Virgil silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and ground moraines
Position on the landform: Footslopes and summits

Map Unit Composition

Virgil and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a lighter colored surface layer
- Soils that have a thicker surface layer
- Soils that have outwash within a depth of 40 inches
- Soils that have till in the lower part of the profile
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Virgil Soil

Parent material: Loess and the underlying outwash
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate

Depth and months of highest apparent seasonal high water table: 0.5 foot to 2.0 feet, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

W—Water

This map unit consists of natural bodies of water, such as ponds, lakes, and rivers.

Waupecan Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Typical Pedon

Waupecan silt loam, 0 to 2 percent slopes; at an elevation of 880 feet; 225 feet south and 1,455 feet west of the northeast corner of sec. 21, T. 42 N., R. 6 E.; Kane County, Illinois; USGS Hampshire topographic quadrangle; lat. 42 degrees 06 minutes 34 seconds N. and long. 88 degrees 32 minutes 08 seconds W., NAD 27; UTM Zone 16T, 0373038 easting and 4663072 northing, NAD 83:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; common very fine roots; neutral; abrupt smooth boundary.
A—8 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.
BA—13 to 19 inches; brown (10YR 4/3) silt loam; weak very fine subangular blocky structure; firm; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organic coatings in pores; slightly acid; clear smooth boundary.
Bt1—19 to 28 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
Bt2—28 to 38 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; abrupt smooth boundary.
2Bt3—38 to 44 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium and coarse subangular blocky structure; firm; few very fine roots; common distinct brown (7.5YR 4/3) clay films on faces of peds; 1 percent dolomitic pebbles; moderately acid; clear smooth boundary.
2Bt4—44 to 49 inches; brown (7.5YR 4/4) sandy clay loam; weak coarse subangular blocky structure; friable; few very fine roots; many distinct dark brown (7.5YR 3/4)

clay films on faces of peds; 2 percent dolomitic pebbles; slightly acid; clear smooth boundary.

2Bt5—49 to 55 inches; brown (7.5YR 4/4) sandy loam; weak coarse subangular blocky structure; friable; many distinct dark brown (7.5YR 3/3) clay bridges between sand grains; 8 percent dolomitic pebbles; neutral; abrupt smooth boundary.

3C—55 to 70 inches; brown (10YR 5/3) gravelly sand; single grain; loose; 32 percent dolomitic pebbles and cobblestones; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of the loess or other silty material: 24 to 48 inches
Depth to sandy and gravelly deposits: 40 to 60 inches
Depth to carbonates: 40 to 60 inches
Depth to the base of soil development: 40 to 65 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

BA horizon (where present) and/or Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt and/or 2BC horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—loam, clay loam, sandy clay loam, or sandy loam or the gravelly analogs of these textures; stratified in some pedons
Content of gravel—less than 35 percent

3C horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 to 6
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand; stratified in most pedons
Content of gravel—15 to 70 percent
Content of cobbles—less than 35 percent

369A—Waupecan silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Summits

Map Unit Composition

Waupecan and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have a thinner surface layer
- Soils that have less gravel in the lower part of the profile
- Soils that have sandy or gravelly deposits at a depth of less than 40 inches or more than 60 inches
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Waupecan Soil

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

369B—Waupecan silt loam, 2 to 4 percent slopes

Setting

Landform: Outwash plains and stream terraces
Position on the landform: Backslopes and summits

Map Unit Composition

Waupecan and similar soils: 90 percent
Dissimilar soils: 10 percent

Soils of Minor Extent

Similar soils:
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have a thinner surface layer
- Soils that have less gravel in the lower part of the profile
- Soils that have sandy or gravelly deposits at a depth of less than 40 inches or more than 60 inches
- Soils that have slopes of less than 2 percent or more than 4 percent

Dissimilar soils:
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Waupecan Soil

Parent material: Loess or other silty material and the underlying loamy and gravelly outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3 to 5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses or describe specific management concerns. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the potential of the soils for the use. Terms for limitation classes are *not limited, somewhat limited,* and *very limited*. Terms indicating the potential of the soils for a given use are *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Soil Series and Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 2002, Kendall County had about 168,082 acres of farmland. Of this total, 161,129 acres was cropland. The major row crops are corn and soybeans. Wheat is the major small grain crop, and alfalfa is the major forage crop. Some areas in the county are still used for pasture. Other areas are used for vegetable production. Kendall County is number two in the State for sod production (fig. 7) and number six for production of nursery crops (USDA, National Agricultural Statistics Service, 2006).

The soils in Kendall County have good potential for continued agricultural production, especially if the latest production technology is applied. This soil survey can be used as a guide in applying this technology.

The major management concerns affecting the use of the soils in the county for agriculture are water erosion, wetness, restricted permeability, poor tilth, crusting, high pH, excess lime, root-restrictive layers, compaction, and frost heave.

Water erosion is a potential problem on approximately 28 percent of the farms in the county. Erosion can be a problem on soils with slopes of more than 2 percent, such as Saybrook, Lorenzo, and Strawn soils. It also is a hazard in areas where slopes are less than 2 percent but are long and in areas where runoff water is concentrated.

The loss of the surface layer through erosion is damaging for several reasons. Soil productivity is reduced as the surface soil is removed and part of the subsoil is incorporated into the plow layer. The subsoil is generally lower in content of plant nutrients and organic matter and higher in content of clay than the surface soil. As the content of organic matter decreases and the content of clay increases in the surface layer, soil tilth deteriorates, resulting in soil crusting and a reduced rate of water infiltration. Under these conditions, preparing a good seedbed could be difficult. Erosion also results in the sedimentation of streams, rivers, road ditches, and lakes. Sediment pollution reduces water quality for agricultural, municipal, and recreational uses and for fish and wildlife. Removing the sediment generally is expensive and time consuming. Erosion control helps to minimize this pollution and improves water quality.

Erosion-control measures include both cultural and structural practices. Cultural erosion-control measures include conservation tillage and cropping systems, contour farming, and crop rotations. Conservation practices used in the county to control erosion include chisel plowing, no-till farming, and contour farming. Chisel plowing roughs up the soil surface and leaves crop residue to help control erosion. No-till farming is most effective on well drained and moderately well drained soils, such as Proctor and Saybrook soils (fig. 8). No-till farming leaves a cover of crop residue on 20 to 90 percent of the soil surface. In areas where slopes are smooth and uniform, contour farming can also be used to help control erosion. Another cultural practice

Figure 7.—A sod farm in an area of Drummer silty clay loam, 0 to 2 percent slopes (foreground), and Proctor silt loam, 2 to 5 percent slopes (background).

that can help to control erosion is the use of crop rotations. A crop rotation that includes 1 or more years of close-growing grasses or legumes can minimize the total soil loss for a field.

Structural practices that are used in Kendall County include block chutes, grassed filter strips, grassed waterways, water- and sediment-control basins (fig. 9), and terraces. Structural practices are needed in drainageways where concentrated runoff flows overland. Establishing grassed waterways or erosion-control structures, such as water- and sediment-control basins and terraces, reduces the hazard of this type of erosion.

Drainage systems have been installed in most areas of the poorly drained and somewhat poorly drained soils used as cropland in the county. Therefore, these soils are adequately drained for the crops commonly grown in the county. Measures that maintain the drainage system are needed. A subsurface drainage system has been installed in most poorly drained soils, such as Elpaso and Drummer soils. In some areas of poorly drained, slowly permeable soils and very poorly drained soils, such as Bryce and Peotone soils, surface tile inlets or shallow surface ditches are required to remove excess water. In some areas, somewhat poorly drained soils are wet long enough for productivity to be reduced in some years unless a drainage system is installed. A subsurface drainage system has been installed in most areas of the somewhat poorly drained Lisbon and Elburn soils used as cropland.

Restricted permeability can increase the susceptibility of a soil to erosion. As water movement slows within a soil, the hazard of runoff increases. The slowly and very slowly permeable Swygert and Nappanee soils are more susceptible to erosion than the moderately permeable Clare and Somonauk soils. The effect of restricted permeability on soil erosion can be reduced by applying conservation practices that leave crop residue on the surface after planting and by incorporating organic material into the soil in the fall.

Restricted permeability can limit the effectiveness of drainage systems. The drainage tiles should be more closely spaced in areas of the slowly permeable Swygert soils than in areas of the moderately permeable Elburn soils.

Figure 8.—No-till farming helps to control erosion in an area of Saybrook silt loam, 5 to 10 percent slopes, eroded.

Soil tilth is an important factor influencing the germination of seeds, the amount of runoff, and the rate of water infiltration. Soils that have good tilth are granular and porous and have a high content of organic matter. Poor tilth is a problem on soils that have a surface layer of silty clay loam or silty clay. If Ashkum, Bryce, and Elpaso soils are plowed when wet, the surface layer can become cloddy. This cloddiness hinders the preparation of a good seedbed. Tilling in the fall, leaving the soil surface rough, incorporating organic material into the soil, and leaving moderate amounts of crop residue on the surface generally result in good tilth in the spring.

Crusting can be a problem in areas of Camden and Mayville soils, which have a surface layer of silt loam that is low in content of organic matter. Generally, the structure of these soils is weak, and a crust forms on the surface during periods of intense rainfall. This crust is hard when dry. It inhibits seedling emergence, reduces the infiltration rate, and increases the runoff rate and the hazard of erosion. Regular additions of organic material improve soil structure and minimize crusting.

A high pH within a depth of 40 inches or excess lime within a depth of 16 inches can occur in Harpster, Millington, and Du Page soils. The high soil reaction can reduce the uptake of some nutrients by the plants or cause other elements to accumulate to toxic levels. A regular soil testing program can help to determine the correct pH and nutrient needs of these types of soils. Incorporating organic material into the soil and applying a combination of conservation tillage and cropping systems help to minimize the harmful effects of this limitation.

A root-restrictive layer or bedrock limits the amount of water available for crop growth. Swygert, Varna, and Ripon soils are moderately deep or deep to layers that

restrict the penetration of plant roots. Planting cover crops and applying a conservation cropping system that leaves crop residue on the surface after planting increase the rate of water infiltration and reduce the runoff rate. Planting drought-tolerant species, such as soybeans or winter wheat, is beneficial because these crops make the most efficient use of the limited amount of water.

Proper management is needed on hayland to prolong the life of desirable forage species, maintain or improve the quality and quantity of forage, and control erosion and runoff. Hay may last as a vigorous crop for 4 or 5 years, depending on management and on the varieties seeded. Suitable hay plants include legumes, such as alfalfa and red clover, and cool-season grasses, such as smooth bromegrass, orchardgrass, and timothy. Alfalfa is the most common legume grown for hay. It is often used in mixtures with smooth bromegrass and orchardgrass. Alfalfa is best suited to moderately well drained soils, such as Blackberry and Catlin soils. Measures that maintain or improve fertility are needed. The amount of lime and fertilizer to be added to the soil should be based on the results of soil tests, the needs of the plants, and the expected level of yields. Seed varieties should be selected in accordance with the soil properties and the drainage conditions of the specific tract of land.

Proper pasture management is essential to reduce the overall costs of livestock production. Overgrazing reduces the vigor of pasture plants and reduces forage production. It also increases the extent of weeds and brush. Deferred grazing, rotation grazing, and proper stocking rates help to prevent overgrazing. Deferred grazing allows the plants in pastures that are not being used to build up reserves of carbohydrates. Rotating grazing among several pastures allows each pasture a rest period (fig. 10).

Many of the soils in the survey area have a high water table in the spring. Drummer and Elpaso soils are examples. Deferring grazing during wet periods can minimize surface compaction in pastures. Pasture renovation also helps to prevent compaction. Frost heave can be a concern in areas where the soils have a high seasonal water table. The action of freezing and thawing can damage alfalfa and red clover in these areas. Leaving a cover of stubble 4 to 6 inches high during the winter and planting mixtures of grasses and legumes help to prevent frost heave.

Figure 9.—A water- and sediment-control basin helps to prevent gullies in a drainageway on a long slope in an area of Saybrook silt loam, 2 to 5 percent slopes, eroded.

Figure 10.—A pasture in an area of Elburn silt loam, 0 to 2 percent slopes (foreground), and La Rose clay loam, 5 to 10 percent slopes, severely eroded (background). Rotation grazing and proper stocking rates help to prevent overgrazing.

Measures that maintain or improve pasture fertility are needed. The amount of lime and fertilizer to be added to the soil should be based on the results of soil tests, the needs of the plants, and the expected level of production.

Limitations Affecting Cropland and Pastureland

The management concerns affecting the use of the detailed soil map units in the survey area for crops and pasture are shown in table 6.

Cropland

The main concerns affecting the management of nonirrigated cropland in Kendall County include crusting, depth to bedrock, excess lime, excessive permeability, flooding, high pH, limited available water capacity, ponding, poor tilth, restricted permeability, root-restrictive layers, subsidence, water erosion, wetness, and wind erosion. These concerns are described in the following paragraphs.

Crusting occurs in the surface layer when the average content of organic matter is 2.5 percent or less and the content of clay is between 20 and 35 percent. Structure generally is weak in areas of such soils. Crusting inhibits seedling emergence, reduces the infiltration rate, and increases the runoff rate and the hazard of erosion. Regular additions of organic material improve soil structure and minimize crusting.

Depth to bedrock is a concern when bedrock is within 40 inches of the surface. This limitation cannot be easily overcome. Applying a conservation cropping system that leaves crop residue on the surface after planting increases the rate of water infiltration and reduces the runoff rate in areas where depth to bedrock is a concern.

Excess lime occurs when the calcium carbonate equivalent is 15 percent or more within a depth of 16 inches. This limitation can reduce the uptake of some nutrients by the plants or cause other elements to accumulate to toxic levels. A regular soil testing program can help to determine the correct pH and nutrient needs of this type of soil. Crops may respond well to additions of phosphate fertilizer on soils that have a high content of lime. Incorporating organic material into the soil and applying a combination of conservation tillage and cropping systems can minimize the harmful effects of this limitation.

Excessive permeability occurs when the lower limit of the permeability rate is 6.0 or more inches per hour within the soil profile. This limitation can cause deep leaching of nutrients and pesticides. Selecting appropriate chemicals and using split application methods reduce the hazard of ground-water contamination.

Flooding is displayed in the table for map units that are subject to frequent or occasional flooding. Flooding cannot be easily overcome. Winter small grain crops can be damaged by floodwater. Tilling and planting should be delayed in the spring until flooding is no longer a hazard. Dikes and diversions can reduce the extent of the crop damage caused by floodwater.

High pH occurs when the lower limit of the pH is 7.4 or more within a depth of 40 inches. The high soil reaction can reduce the uptake of some nutrients by the plants or cause other elements to accumulate to toxic levels. A regular soil testing program can help to determine the correct pH and nutrient needs. Incorporating organic material into the soil and applying a combination of conservation tillage and cropping systems help to minimize the harmful effects of this limitation.

Limited available water capacity occurs when the available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less. Available water capacity refers to the capacity of soils to hold water available for use by most plants. The effects can be minimized by reducing the evaporation and runoff rates and increasing the rate of water infiltraton. Drought-tolerant species should be planted because they make the most efficient use of the limited amount of water. Applying conservation tillage and cropping systems that leave crop residue on the surface, farming on the contour, and establishing field windbreaks conserve moisture.

Ponding is a hazard when the seasonal high water table is above the surface. It typically occurs in the spring or after a heavy rain. Surface inlet drains or diversions can help to control ponding.

Poor tilth occurs when the lower limit of the clay content in the surface layer is 27 percent or more. Soil tilth is an important factor influencing the germination of seeds, the amount of runoff, and the rate of water infiltration. Soils that have good tilth are granular and porous and have a high content of organic matter. Poor tilth is a problem on soils that have a surface layer of silty clay loam or silty clay. If these soils are plowed when wet, the surface layer may become cloddy. This cloddiness hinders the preparation of a good seedbed. Tilling in the fall, leaving the soil surface rough, incorporating organic material into the soil, and leaving moderate amounts of crop residue on the surface generally result in good tilth in the spring.

Restricted permeability is a limitation if permeability is less than 0.2 inch per hour within a depth of 40 inches. Restricted permeability can increase the susceptibility of the soil to erosion and can limit the effectiveness of drainage systems. The hazard of erosion can be reduced by applying conservation practices that leave crop residue on the surface after planting and by incorporating organic material into the soil in the fall. Narrowing the spacing of tile improves the ability of the drainage system to lower the water table.

A *root-restrictive layer* is a dense soil layer within a depth of 40 inches. This limitation cannot be easily overcome. Planting cover crops and applying a conservation cropping system that leaves crop residue on the surface after planting increase the rate of water infiltration and reduce the runoff rate. Drought-tolerant

species should be planted because they make the most efficient use of the limited amount of water.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence occurs as a result of shrinkage from drying, consolidation because of the loss of ground water, compaction from tillage, wind erosion, burning, and biochemical oxidation. Limiting the amount of drainage, avoiding excessive tillage, avoiding tillage when the soil is wet, planting field windbreaks, and using a conservation cropping system that leaves crop residue on the surface after planting help to control subsidence.

Water erosion is a hazard in areas of cropland if the erosion factor Kw of the surface layer multiplied by the upper limit of the slope is 0.8 or more and the slope is 3 percent or more. Generally, a combination of several practices is needed to control water erosion. Crop rotations, conservation tillage and cropping systems, field windbreaks, contour farming, block chutes, water- and sediment-control basins, terraces, grassed filter strips, and grassed waterways help to prevent excessive soil loss.

Wetness is a limitation when the seasonal high water table is within a depth of 1.5 feet. Drainage systems consist of subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these. Measures that maintain the drainage system are needed.

Wind erosion occurs on organic or sandy soils that are assigned to wind erodibility group (WEG) 1 or 2. Applying a conservation tillage and cropping system that leaves crop residue on the surface after planting, keeping the surface rough, and establishing field windbreaks can help to control wind erosion.

Erosion factors (e.g., the Kw factor) and wind erodibility groups are described under the heading “Physical Properties.”

Pastureland

The main concerns affecting the management of pastureland in Kendall County include depth to bedrock, equipment limitations, excess lime, excessive permeability, flooding, frost heave, high pH, limited available water capacity, low fertility, low pH, ponding, poor tilth and compaction, root-restrictive layers, water erosion, wetness, and wind erosion.

Soils in which the *depth to bedrock* is 40 inches or less have a restricted root zone and a limited amount of available moisture. Planting adapted forage and hay varieties minimizes this limitation. The plants should not be clipped or grazed until they are sufficiently established. Rotation grazing and timely deferment of grazing help to maintain healthy stands of forage plants, which, in turn, reduce the runoff rate and conserve moisture.

Equipment limitation is displayed in the table for soils in which the average slope is more than 10 percent. This limitation can cause rapid wear of equipment and can hinder fertilization, harvest, pasture renovation, and seedbed preparation. This limitation cannot be easily overcome.

Excess lime occurs when the calcium carbonate equivalent is 15 percent or more within a depth of 16 inches. This limitation can reduce the uptake of some nutrients by the plants or cause other elements to accumulate to toxic levels. A regular soil testing program can help to determine the correct pH and nutrient needs. Crops may respond well to additions of phosphate fertilizer on soils that have a high content of lime. Incorporating organic material into the soil and applying a combination of conservation tillage and cropping systems help to minimize the harmful effects of this limitation.

Excessive permeability occurs when the lower limit of the permeability rate is 6.0 or more inches per hour within the soil profile. This limitation can cause deep leaching of nutrients and pesticides. Selecting appropriate chemicals and using split

application methods can reduce the hazard of ground-water contamination when stands of legumes and grasses are established or renovated.

Flooding can damage forage stands and delay harvesting in some years. Dikes and diversions help to control the extent of damage caused by floodwater. Selecting species of grasses and legumes adapted to wet conditions improves forage production. Restricting grazing during wet periods helps to keep the pasture in good condition.

Frost heave is a limitation in poorly drained and very poorly drained soils that have a moderate or high potential for frost action. It occurs when ice lenses or bands that drive an ice wedge between two layers develop near the surface layer of a soil. The ice wedges heave the overlying soil layer upward, snapping the roots. Soils with a low content of sand have small pores that hold water and enable ice lenses to form. Selecting adapted forage and hay varieties can reduce the effects of frost heave. Timely deferment of grazing helps to maintain a protective cover that insulates the soil, thereby reducing the effects of frost heave.

High pH is displayed in the table if the lower limit of pH is 7.4 or more within 40 inches of the surface. The high soil reaction associated with this limitation can inhibit the uptake of certain nutrients and micronutrients by the plants or accelerate the absorption of certain other elements to the level of toxic concentrations. Applications of sulfate and phosphate compounds or additions of certain forms of nitrogen fertilizer can lower the pH but should be based on the results of soil tests. Selecting species of grasses and legumes that are tolerant of high pH improves forage production.

Limited available water capacity occurs in areas where the available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less. Available water capacity refers to the capacity of soils to hold water available for use by most plants. The quality and quantity of the pasture plants may be reduced if the amount of available water is inadequate for maintenance of a healthy community of desired pasture species. A poor-quality pasture cannot support the desired number of livestock, can increase the hazard of water erosion, and increases the runoff of pollutants. Planting drought-resistant species of grasses and legumes helps to establish a cover of vegetation. The plants should not be clipped or grazed until they are sufficiently established.

Low fertility occurs in areas where the average content of organic matter in the surface layer is 1 percent or less or the cation-exchange capacity (CEC) is 7 milliequivalents or less per 100 grams of soil. Low fertility affects the health and vigor of the plants and has a direct impact on the quantity and quality of livestock. Additions of fertilizer and other organic material should be based on the results of soil tests, on the needs of specific plant species, and on the desired level of production.

Soils that have *low pH* (or low reaction) have a pH value of 5.5 or less within 40 inches of the surface. Low pH inhibits the uptake of certain nutrients by the plants or accelerates the absorption of certain other elements to the level of toxic concentrations. Either of these conditions affects the health and vigor of the plants. Applications of lime should be based on the results of soil tests. The goal is to achieve the optimum pH level for the uptake of the major nutrients by the specific grass, legume, or combination of grasses and legumes.

Ponding is a hazard when the seasonal high water table is above the surface. It typically occurs in the spring or after a heavy rain. Surface inlet drains or diversions can help to control ponding.

Poor tilth and compaction can occur if the lower limit of the clay content is 27 percent or more and the lower limit of the organic matter content is less than 3 percent. Overgrazing or grazing when the soil is wet reduces the extent of the plant cover, results in surface compaction and poor tilth, and thus increases the susceptibility to erosion. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition.

Properly locating livestock watering facilities helps to prevent surface compaction or the formation of ruts by making it unnecessary for cattle to travel long distances up and down the steeper slopes.

A *root-restrictive layer* is a dense layer that occurs within a depth of 40 inches. This layer inhibits root penetration. It reduces the total amount of water that is available to plants. Deep-rooted perennial legumes and grasses make the most efficient use of the limited amount of available water. Selecting drought-tolerant species of legumes and grasses improves forage production.

Water erosion is a hazard in pastured areas where the value of erosion factor Kw multiplied by the upper limit of the slope is 0.8 or more and the slope is 3 percent or more. Water erosion reduces the productivity of a pasture. It also results in onsite and offsite sedimentation, causes water pollution by sedimentation, and increases the runoff of livestock manure and other nutrients. Establishing or renovating stands of legumes and grasses helps to control erosion. Controlling erosion during seedbed preparation is a major concern. If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, establishing grassed waterways, farming on the contour, and applying a conservation tillage system that leaves crop residue on the surface can help to minimize erosion.

Wetness occurs when the seasonal high water table is within 1.5 feet of the surface. Drainage systems consisting of subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these can be used to lower the water table and remove excess water. Measures that maintain the drainage system are needed. Selecting species of grasses and legumes adapted to wet conditions improves forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Organic and sandy soils that have a wind erodibility group (WEG) of 1 or 2 are susceptible to *wind erosion.* If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, applying a system of conservation tillage that leaves crop residue on the surface, and keeping the surface rough help to control wind erosion. Overgrazing or grazing when the soil is wet reduces the extent of the plant cover and increases the susceptibility to wind erosion. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered (Olson and Lang, 2000; Olson and others, 2000).

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

Yields for grass-legume pasture under an average level of management also are shown in table 7. Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The estimated yields in the table reflect the productive capacity of each soil for each of the principal crops and pasture plants. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 7 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage);

s shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, or wildlife habitat.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The capability classification of the soils in this survey area is given in the section “Soil Series and Detailed Soil Map Units” and in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in the survey area has been the conversion of some prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that generally are less productive than prime farmland.

About 161,295 acres, or nearly 78 percent of the total acreage in Kendall County, meets the requirements for prime farmland.

The map units in the survey area that are considered prime farmland are listed in table 8. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps. Some of the soil qualities that affect use and management are described under the heading “Soil Series and Detailed Soil Map Units.”

Hydric Soils

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 2006) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. Table 9 lists the map units that include hydric soils, either as major components or as soils of minor extent. The hydric soils listed in the table meet the definition of a hydric soil and have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and Vasilas, 2006).

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:

A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
B. are poorly drained or very poorly drained and have either:
1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is less than 6.0 in/hr in any layer within a depth of 20 inches.

3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Forestland Management and Productivity

In the early 1800s, forestland covered about 10.8 percent of the land in Kendall County, or about 22,000 acres (Bretthauer and Edgington, 2002). Today about 5.8 percent, or 12,300 acres, is forested (Illinois Department of Agriculture, 2008). Several forest types occur in the county, including flood-plain forests, upland forests, and savannas.

When Kendall County was first settled, the major river valleys and much of the uplands near the major streams were forested. Over the past century, new forests have been created only by natural succession of fallow upland and bottom-land areas, by abandonment of low-yielding cropland, and by seeding or planting of seedlings. Only a small percentage of the present forestland is under proper timber management. Areas of grazed forestland are slowly recovering, but many decades or a full forest generation may be needed before these areas can become productive without management.

The forests in the county are esthetically pleasing, but they also serve to protect and enhance watershed quality, recreation, and wildlife habitat. The small amount of forestland that still exists in the county could be greatly improved if proper management measures were applied. Assistance in establishing, improving, or managing forestland is available from foresters or natural resource specialists with various local, State, and Federal agencies, including the Illinois Department of Natural Resources, the Forest Service, the Natural Resources Conservation Service, and the local Soil and Water Conservation District.

Table 10 provides information regarding considerations affecting site preparation and planting in areas used as forestland.

Considerations shown in the table are as follows:

Slope.—The upper limit of the slope range is more than 15 percent.

Flooding.—The soil is frequently flooded.

Wetness.—The soil is somewhat poorly drained, poorly drained, or very poorly drained or has a perched water table (any drainage class).

Water erosion.—The slope is 8 percent or more.

Potential poor tilth and compaction.—The AASHTO classification is A-6 or A-7 in the upper 10 inches.

Table 11 can help woodland owners or forest managers plan the use of soils for wood crops. Only those soils commonly used for wood crops are listed.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet,

that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or online at http://soils.usda.gov/technical/.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Suggested trees to plant are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Windbreaks are often planted on land that did not originally support trees. Knowledge of how well the trees grow on such land can be gained only by observing and recording the growth of trees that have been planted and have survived. Many popular windbreak species are not indigenous to the areas in which they are planted.

Each tree or shrub species has certain climatic and physiographic limits. Within these parameters, a tree or shrub may grow well or grow poorly, depending on the characteristics of the soil. Each tree or shrub has definable potential heights in a given physiographic area and under a given climate. Accurate definitions of potential heights are necessary when a windbreak is planned and designed.

Table 12 shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in the survey area. The estimates in the table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service or from a commercial nursery.

Recreation

Kendall County offers a wide variety of recreational facilities, including a State park, forest preserves, city parks, and golf courses. Silver Springs State Park provides an assortment of outdoor activities, including boating, boat launching, canoeing, fishing, hiking, biking, camping, picnicking, and cross-country skiing. The Kendall County Forest Preserve District administers 12 forest preserves in the county encompassing over 1,000 acres (fig. 11). The forest preserve district offers a variety of outdoor activities as well as educational and volunteer opportunities. The Fox River

Figure 11.—Hiking trails are among the many recreational features of the forest preserves in Kendall County.

runs through the county and provides additional recreational activities with numerous access points.

The soils of the survey area are rated in tables 13a and 13b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are

limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 13a and 13b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water

capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Kendall County hosts a wide variety of wildlife. Past geologic conditions have played a significant role in soil formation and topography, and a wide variety of soils have developed. The variety of soils has contributed to a diversity of habitat types. Areas that sustain plentiful amounts of high-quality habitat contain both common and unique types of wildlife, including some that are threatened or endangered. Throughout Kendall County, soils directly affect the potential for habitat development and thus the numbers and types of wildlife that might eventually use these habitat types.

Habitat types include grasslands, woodlands, wetlands, and areas of row crops. Row crops are grown on a significant portion of the land in Kendall County. In many areas, they provide the only available habitat of any significance for miles.

There are two broad categories of grasslands: cool-season grasses (such as brome, orchard, and timothy) and warm-season grasses (such as big bluestem, switchgrass, and indiangrass) (fig. 12). Both types of grasses, along with their associated herbaceous plants (flowers), can produce good habitat for wildlife if managed properly. Wildlife in areas of grassland include eastern meadowlark, horned lark, pheasant, bobwhite quail, kestrel, red-tailed hawk, northern harrier, sandhill crane, plains pocket gopher, meadow vole, 13-lined ground squirrel, coyote, badger, white-tailed deer, American toad, and hog-nosed snake.

Many types of wildlife are exclusively dependent on woodland habitat, while some may use woodlands only on a more temporary or seasonal basis. Woodland types can be grouped according to their position on the landscape—that is, on bottom land or in the uplands. Bottom-land woods occur throughout the county and range from very small to large. Trees and shrubs in these areas are specially adapted to somewhat wet to very wet conditions. The remainder of the woodlands in the county are dominated by trees and shrubs that thrive on better drained soils. A wide variety of tree and shrub species grows throughout the county. Examples of woodland wildlife include white-tailed deer, eastern wild turkey, pileated woodpecker, gray squirrel, fox squirrel, red fox, smooth green snake, flying squirrel, and gray tree frog.

Wetlands range from cattail marshes to areas of open water, such as rivers, ponds, and small lakes (fig. 13). Shallow water areas are typically very productive habitats that support both large numbers and numerous types of wildlife. Plants that are characteristic of wetlands have developed under wet conditions and have evolved ways of dealing with excess moisture. River habitat in Kendall County consists of the Fox River and Aux Sable Creek and their tributaries. Much of this habitat is of high quality and contains numerous threatened and endangered species, both plant and animal. A wide assortment of species may use wetland habitat at one time or another. Some common species in areas of wetland habitat are great blue heron, red-winged blackbird, mink, beaver, muskrat, northern water snake, common snapping turtle, soft-shelled turtle, bull frog, largemouth bass, river redhorse, and quillback.

Areas of cropland provide temporary habitat for wildlife during much of the year. Certain species, such as pheasant and killdeer, can actually thrive with little other habitat, provided they are able to successfully nest. Most wildlife species that inhabit areas adjacent to cropland also make use of the cropped areas for food, either

Figure 12.—Warm-season grasses provide food and cover for a variety of wildlife. Pictured is an area of Rush silt loam, 0 to 2 percent slopes.

directly or indirectly. Species that thrive in and around cropped areas are pheasants, killdeer, lark sparrow, kestrel, pocket gopher, white-tailed deer, and badgers.

Assistance with wildlife habitat projects is available from various local, State, and Federal agencies, including the Illinois Department of Natural Resources, the U.S. Fish and Wildlife Service, the Natural Resources Conservation Service, and the Kendall County Soil and Water Conservation District.

In table 14, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are

Figure 13.—Small lakes provide habitat for many diverse types of wildlife.

considerations. Examples of grain and seed crops are corn, soybeans, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are bromegrass, timothy, orchardgrass, clover, alfalfa, and birdsfoot trefoil.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, indiangrass, blueberry, goldenrod, lambsquarters, dandelions, coneflowers, sunflowers, blackberry, ragweed, wheatgrass, and nightshade.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, box elder, birch, maple, green ash, willow, and American elm. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are American plum, hazelnut, dogwood, and arrowwood.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, cedar, and tamarack.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, rushes, sedges, wild rice, arrowhead, waterplantain, cattails, and prairie cordgrass.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include Hungarian partridge, ring-necked pheasant, bobwhite quail, sharp-tailed grouse, meadowlark, field sparrow, killdeer, cottontail rabbit, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, thrushes, woodpeckers, owls, squirrels, raccoons, and white-tailed deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, bitterns, rails, kingfishers, muskrat, otter, mink, beaver, frogs, and turtles.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay

minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 15a and 15b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 16a and 16b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The

limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the

movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 17a and 17b give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 17a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not

evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In table 17b, the rating class terms are *good, fair,* and *poor*. The features that limit the soils as sources of reclamation material, roadfill, and topsoil are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of these materials. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Tables 18a, 18b, and 18c give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; grassed waterways; terraces and diversions; drainage; and irrigation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Table 18a

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the

salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Table 18b

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of wind erosion, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Drainage is used in some areas to remove excess subsurface and surface water from the soil. The ratings in the table apply to undisturbed soils that commonly have a seasonal high water table within a depth of about 3.5 feet. Current land use is not considered in the ratings. Depth to bedrock, a dense layer, or a cemented pan, the content of large stones, and the content of clay influence the ease of digging, filling, and compacting. A seasonal high water table, ponding, and flooding may restrict the period when excavations can be made. The slope influences the use of machinery. Soil texture and depth to the water table influence the resistance to sloughing. Subsidence of organic layers influences grade and stability of tile drains. Limitations affecting areas where the tile line passes through soils in which the water table is generally below a depth of 3.5 feet are provided in the table that includes the column “shallow excavations,” which is described under the heading “Building Site Development.”

Table 18c

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 19 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter (fig. 14). “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

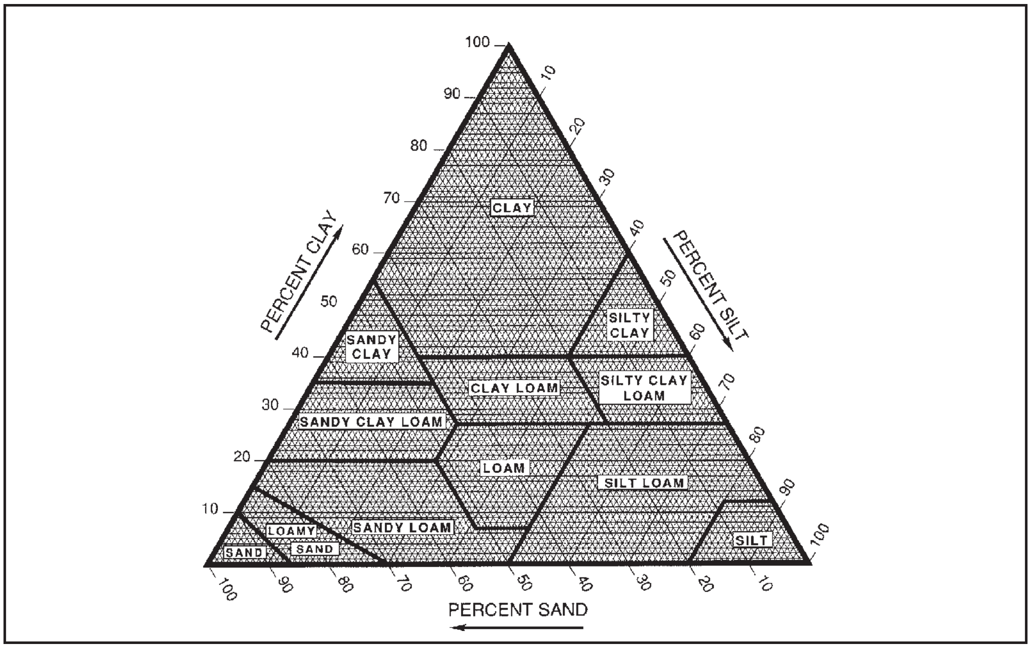

Figure 14.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 20 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as

percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 20, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factors are shown in table 20 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook” (available online at http://soils.usda.gov).

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 21 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Cation-exchange capacity is the total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of exchangeable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Water Features

Table 22 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 22 indicates the depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone for the specified months in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

The table also shows the *kind of water table*, that is, apparent or perched. An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an

unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 22 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* of flooding are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year). *Common* is used when the occasional and frequent classes are grouped for certain purposes.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 23 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or

oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

ABC soil. A soil having an A, a B, and a C horizon.

Ablation till. Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction toward which a slope faces. Also called slope aspect.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp. A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Beach deposits. Material, such as sand and gravel, that is generally laid down parallel to an active or relict shoreline of a postglacial or glacial lake.

Beach ridge. A low, essentially continuous mound of beach or beach-and-dune material accumulated by the action of waves and currents on the backshore of a beach, beyond the present limit of storm waves or the reach of ordinary tides, and occurring singly or as one of a series of approximately parallel deposits. The ridges are roughly parallel to the shoreline and represent successive positions of an advancing shoreline.

Bedding plane. A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Cahokia Formation (geology). Deposits on flood plains and in channels of modern rivers and streams. Mostly poorly sorted sand, silt, or clay containing local deposits of sandy gravel.
Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
Calcium carbonate. A common mineral in sediments and soils.
Canopy. The leafy crown of trees or shrubs. (See Crown.)
Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.
Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
Catsteps. See Terracettes.
Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.
Chemical treatment. Control of unwanted vegetation through the use of chemicals.
Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.
Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
Clay depletions. See Redoximorphic features.
Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.
Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.
Coarse textured soil. Sand or loamy sand.
Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.
COLE (coefficient of linear extensibility). See Linear extensibility.
Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.
Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.
Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them

separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. See Redoximorphic features.

Congeliturbate. Soil material disturbed by frost action.

Conglomerate. A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The

point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diamicton. A generic term for a till-like mixture of unsorted, unstratified rock debris composed of a wide range of particle sizes. Use of this term carries no suggestion about how such debris was formed or deposited.

Diatomaceous earth. A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Dolostone. A carbonate sedimentary rock consisting chiefly (more than 50 percent by weight or by areal percentages under the microscope) of the mineral dolomite.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Drift. A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from

which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill. See Mine spoil.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

End moraine. A ridgelike accumulation that is being or was produced at the outer margin of an actively flowing glacier at any given time.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit. Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Equality Formation (geology). This formation consists of gray to red silt and clay, generally shows evidence of bedding structures, and occurs above the Sangamon Geosol. Predominantly occurs as a fine grained lacustrine sediment. Ranges from 26,000 radiocarbon years to present in age. (See Mason Group.)

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion surface. A land surface shaped by the action of erosion, especially by running water.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Esker. A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left

behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) deposited and cooled on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Geosol. A buried soil that formed on a landscape in the past with distinctive morphological features resulting from a soil-forming environment that no longer exists at the site. The former pedogenic process was interrupted by burial. A geosol is a laterally traceable, mappable, geologic weathering profile that has a consistent stratigraphic position. (See Paleosol.)

Glacial (geology). This term embraces both the processes and results of erosion and deposition arising from the presence of an ice mass (glacier) on a landscape.

Glacial lake (relict). An area formerly occupied by a glacial lake. (See Glaciolacustrine deposits.)

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground moraine. An extensive, fairly even layer of till having an uneven or undulating surface.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology). A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Henry Formation (geology). Consists of stratified sand and gravel that occurs above the Sangamon Geosol.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Holocene (geology). Postglacial age or time period (interglacial). About 0 to 12,600 years before present. (See Quaternary.)

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illinoian (geology). In Illinois, represents the glacial age of ice advance preceding the Sangamonian and Wisconsinan and following the Yarmouthian and pre-Illinoian during the Pleistocene. This glaciation practically covered the entire State of Illinois with the exception of small portions in northwestern, western, and southern Illinois. (See Pleistocene.)

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of

backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Interglacial. A period of time between major glacial stages. (See Holocene, Sangamonian, and Yarmouthian.)

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation include:

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Kame. A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Karst (topography). A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Krotovina. An irregular, tubelike streak in a soil horizon created when tunnels made by a burrowing animal are filled with material from another horizon.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Lamella. A thin (commonly less than 1 cm), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated within a coarser textured eluviated layer several centimeters to several decimeters thick).

Landslide. A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Lemont Formation (geology). The Lemont Formation of the Wedron Group is the succession of fine to coarse textured gray diamicton units that overlie the Tiskilwa Formation. The Lemont Formation has four differentiated members: the Lemont Member, the Batestown Member, the Yorkville Member, and the Haeger Member. In northern Illinois, the Lemont Formation is not subdivided. The Lemont Formation consists of calcareous, gray, fine to coarse textured diamicton units that contain lenses of gravel, sand, silt, and clay.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength. The soil is not strong enough to support loads.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Mason Group (geology). The Mason Group comprises three proglacial and one postglacial sorted sediment formations that represent distinct stratigraphic layers based on grain size and bedding characteristics. The proglacial units are Roxana Silt, Peoria Silt, and the Henry Formation. The postglacial unit is the Equality Formation.

Mass movement. A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses. See Redoximorphic features.

Meander belt. The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar. A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll. One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

MLRA (major land resource area). A geographic area characterized by a particular pattern of land uses, elevation and topography, soils, climate, water resources, and potential natural vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash. Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain. An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleosol. A general term used to describe a soil that formed on a landscape of the past; it may be a buried soil, a relict soil, or an exhumed soil. (See Geosol.)

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Peoria Silt (geology). Light yellow tan to gray calcareous silt that grades from sandy silt in the bluffs to clayey silt away from the bluffs. The upper part of Peoria Silt is also informally known as Richland loess where it overlies the Wedron Group. The lower part, where buried by materials of the Wedron Group, is known as the Morton Tongue. Peoria Silt covers most of Illinois and ranges in thickness from 80 feet in bluff areas along the Mississippi River to 1 or 2 feet in areas away from the bluffs. Deposition occurred 25,000 to 12,000 years ago. (See Mason Group.)

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as

"permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology). A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Pleistocene (geology). The period in a geologic time series that encompasses all glacial and interglacial stages. Includes the Wisconsinan, Sangamonian, Illinoian, Yarmouthian, and pre-Illinoian. The period covered is about 12,600 to 2 million years before present.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable

vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Quaternary (geology). The latest period of time in the stratigraphic column, about 0 to 2 million years before present, represented by local accumulations of glacial (Pleistocene) and postglacial (Holocene) deposits. An artificial division of time used to separate pre-human from post-human sedimentation.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
   - A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
   - B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
   - C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:

A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*

B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).

3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sangamonian (geology). In Illinois, represents an interglacial age between the Illinoian and Wisconsinan glacial stages during the Pleistocene. (See Pleistocene; Geosol.)

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat). See Permeability.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and

marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines.

Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils

are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain. An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Wedron Group (geology). Mostly diamicton of the Wisconsinan Age.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Wisconsinan (geology). In Illinois, represents the last glacial stage of ice advance during the Pleistocene. Follows the Sangamonian interglacial stage. (See Pleistocene.)

Yarmouthian (geology). In Illinois, represents an interglacial stage between the pre-Illinoian and Illinoian glacial stages during the Pleistocene. (See Pleistocene.)

Yorkville Member (geology). The Yorkville Member is the middle unit of diamicton in the Lemont Formation. The Yorkville Member generally consists of calcareous gray, fine textured (silty clay to silty clay loam) diamicton that contains lenses of gravel, sand, silt, and clay. It typically oxidizes to olive brown. Locally, the Yorkville Member is coarser texturally and therefore similar to the Batestown Member.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Aurora College, Illinois)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	29.9	11.7	20.8	56	-19	0	1.62	0.74	2.38	4	9.9
February---	35.5	16.8	26.2	62	-13	0	1.52	.69	2.25	4	7.0
March------	47.2	27.3	37.2	78	4	22	2.55	1.17	3.74	5	3.4
April------	59.8	37.5	48.6	84	18	92	3.91	2.42	5.25	7	.7
May--------	72.1	47.9	60.0	91	30	321	3.91	2.32	5.33	7	.0
June-------	81.2	57.3	69.2	96	41	580	4.29	2.58	5.83	7	.0
July-------	84.6	62.2	73.4	98	47	728	4.40	2.26	6.26	5	.0
August-----	82.5	60.4	71.5	96	47	661	4.46	2.02	6.55	6	.0
September--	75.4	51.8	63.6	93	33	410	3.30	1.74	4.73	5	.0
October----	63.5	40.1	51.8	85	22	134	2.68	1.40	3.80	5	.1
November---	47.8	29.5	38.7	73	8	21	3.23	1.58	4.67	5	1.4
December---	34.1	17.6	25.9	60	-11	2	2.44	1.28	3.46	5	8.3
Yearly:											
Average---	59.5	38.3	48.9	---	---	---	---	---	---	---	---
Extreme---	103	-26	---	99	-20	---	---	---	---	---	---
Total-----	---	---	---	---	---	2,971	38.31	30.77	43.10	65	30.8

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Aurora College, Illinois)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 17	Apr. 24	May 16
2 years in 10 later than--	Apr. 12	Apr. 20	May 11
5 years in 10 later than--	Apr. 3	Apr. 13	Apr. 30
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 15	Oct. 2	Sept. 27
2 years in 10 earlier than--	Oct. 21	Oct. 8	Oct. 1
5 years in 10 earlier than--	Nov. 1	Oct. 20	Oct. 8

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Aurora College, Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	189	169	143
8 years in 10	196	176	149
5 years in 10	209	190	160
2 years in 10	223	203	172
1 year in 10	230	210	178

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Andres	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Ashkum	Fine, mixed, superactive, mesic Typic Endoaquolls
Barrington	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Birkbeck	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Blackberry	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Brenton	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Bryce	Fine, mixed, superactive, mesic Vertic Endoaquolls
Camden	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Campton	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Casco	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Inceptic Hapludalfs
Catlin	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Chenoa	Fine, illitic, mesic Aquic Argiudolls
Clare	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
Danabrook	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Danabrook	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Del Rey	Fine, illitic, mesic Aeric Epiaqualfs
Dresden	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Mollic Hapludalfs
Drummer	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Du Page	Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls
Elburn	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Elliott	Fine, illitic, mesic Aquic Argiudolls
Elpaso	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Flanagan	Fine, smectitic, mesic Aquic Argiudolls
Fox	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs
Graymont	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Graymont	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Harpster	Fine-silty, mixed, superactive, mesic Typic Calciaquolls
Hennepin	Fine-loamy, mixed, active, mesic Typic Eutrudepts
Houghton	Euic, mesic Typic Haplosaprists
Kaneville	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Kendall	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Knight	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
*La Rose	Fine-loamy, mixed, active, mesic Oxyaquic Argiudolls
*La Rose	Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs
Landes	Coarse-loamy, mixed, superactive, mesic Fluventic Hapludolls
Lena	Euic, mesic Typic Haplosaprists
Lisbon	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Lorenzo	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Typic Argiudolls
Martinton	Fine, illitic, mesic Aquic Argiudolls
Mayville	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Milford	Fine, mixed, superactive, mesic Typic Endoaquolls
Millbrook	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Millington	Fine-loamy, mixed, superactive, calcareous, mesic Cumulic Endoaquolls
Mundelein	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Nappanee	Fine, illitic, mesic Aeric Epiaqualfs
Orthents, loamy	Fine-loamy, mixed, active, nonacid, mesic Oxyaquic Udorthents
Pella	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Peotone	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
Plano	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Plano	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Proctor	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Proctor	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Ripon	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Ripon	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Rodman	Sandy-skeletal, mixed, mesic Typic Hapludolls
Rush	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Sawmill	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Saybrook	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Saybrook	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Somonauk	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Sparta	Sandy, mixed, mesic Entic Hapludolls
St. Charles	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
*Strawn	Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs
Sunbury	Fine, smectitic, mesic Aquollic Hapludalfs
Swygert	Fine, mixed, active, mesic Aquic Argiudolls
*Swygert	Fine, mixed, active, mesic Aquollic Hapludalfs
Symerton	Fine-loamy, mixed, superactive, mesic Oxyaquic Argiudolls
*Symerton	Fine-loamy, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Thorp	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Varna	Fine, illitic, mesic Oxyaquic Argiudolls
*Varna	Fine, illitic, mesic Mollic Oxyaquic Hapludalfs
*Varna	Fine, illitic, mesic Oxyaquic Hapludalfs
Virgil	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
Waupecan	Fine-silty, mixed, superactive, mesic Typic Argiudolls

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
44A	Pella silty clay loam, 0 to 2 percent slopes, bedrock substratum	317	0.2
59A	Lisbon silt loam, 0 to 2 percent slopes	7,178	3.5
60B2	La Rose silt loam, 2 to 5 percent slopes, eroded	426	0.2
60C2	La Rose silt loam, 5 to 10 percent slopes, eroded	4,564	2.2
60C3	La Rose clay loam, 5 to 10 percent slopes, severely eroded	2,421	1.2
67A	Harpster silty clay loam, 0 to 2 percent slopes	869	0.4
69A	Milford silty clay loam, 0 to 2 percent slopes	4,085	2.0
88D	Sparta loamy sand, 6 to 12 percent slopes	86	*
91A	Swygert silty clay loam, 0 to 2 percent slopes	7,226	3.5
91B	Swygert silty clay loam, 2 to 4 percent slopes	1,277	0.6
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded	47	*
91C2	Swygert silty clay loam, 4 to 6 percent slopes, eroded	365	0.2
101A	Brenton silt loam, 0 to 2 percent slopes, bedrock substratum	179	*
103A	Houghton muck, 0 to 2 percent slopes	640	0.3
104A	Virgil silt loam, 0 to 2 percent slopes	325	0.2
134C2	Camden silt loam, 5 to 10 percent slopes, eroded	797	0.4
137A	Clare silt loam, 0 to 2 percent slopes, bedrock substratum	1,640	0.8
137B	Clare silt loam, 2 to 5 percent slopes, bedrock substratum	611	0.3
145A	Saybrook silt loam, 0 to 2 percent slopes	1,952	0.9
145B	Saybrook silt loam, 2 to 5 percent slopes	14,070	6.8
145B2	Saybrook silt loam, 2 to 5 percent slopes, eroded	1,752	0.8
145C2	Saybrook silt loam, 5 to 10 percent slopes, eroded	3,199	1.6
146B	Elliott silt loam, 2 to 4 percent slopes	12	*
148A	Proctor silt loam, 0 to 2 percent slopes	1,708	0.8
148B	Proctor silt loam, 2 to 5 percent slopes	1,508	0.7
148C2	Proctor silt loam, 5 to 10 percent slopes, eroded	660	0.3
149A	Brenton silt loam, 0 to 2 percent slopes	7,239	3.5
152A	Drummer silty clay loam, 0 to 2 percent slopes	27,328	13.3
154A	Flanagan silt loam, 0 to 2 percent slopes	807	0.4
171A	Catlin silt loam, 0 to 2 percent slopes	776	0.4
171B	Catlin silt loam, 2 to 5 percent slopes	333	0.2
189A	Martinton silt loam, 0 to 2 percent slopes	4,109	2.0
189B	Martinton silt loam, 2 to 4 percent slopes	569	0.3
191A	Knight silt loam, 0 to 2 percent slopes	363	0.2
192A	Del Rey silt loam, 0 to 2 percent slopes	473	0.2
193A	Mayville silt loam, 0 to 2 percent slopes	240	0.1
193B	Mayville silt loam, 2 to 5 percent slopes	2,581	1.3
193C2	Mayville silt loam, 5 to 10 percent slopes, eroded	582	0.3
198A	Elburn silt loam, 0 to 2 percent slopes	6,148	3.0
199A	Plano silt loam, 0 to 2 percent slopes	2,666	1.3
199B	Plano silt loam, 2 to 5 percent slopes	436	0.2
199C2	Plano silt loam, 5 to 10 percent slopes, eroded	54	*
206A	Thorp silt loam, 0 to 2 percent slopes	858	0.4
210A	Lena muck, 0 to 2 percent slopes	292	0.1
219A	Millbrook silt loam, 0 to 2 percent slopes	550	0.3
223B	Varna silt loam, 2 to 4 percent slopes	248	0.1
223B2	Varna silt loam, 2 to 4 percent slopes, eroded	74	*
223C2	Varna silt loam, 4 to 6 percent slopes, eroded	1,565	0.8
223C3	Varna silty clay loam, 4 to 6 percent slopes, severely eroded	349	0.2
223D3	Varna silty clay loam, 6 to 12 percent slopes, severely eroded	286	0.1
224C2	Strawn silt loam, 5 to 10 percent slopes, eroded	2,916	1.4
224C3	Strawn clay loam, 5 to 10 percent slopes, severely eroded	591	0.3
224D2	Strawn silt loam, 10 to 18 percent slopes, eroded	388	0.2
224D3	Strawn clay loam, 10 to 18 percent slopes, severely eroded	123	*
224F2	Strawn silt loam, 18 to 35 percent slopes, eroded	239	0.1
228A	Nappanee silt loam, 0 to 2 percent slopes	170	*
228B	Nappanee silt loam, 2 to 4 percent slopes	146	*
232A	Ashkum silty clay loam, 0 to 2 percent slopes	135	*
233A	Birkbeck silt loam, 0 to 2 percent slopes	43	*
234A	Sunbury silt loam, 0 to 2 percent slopes	61	*
235A	Bryce silty clay, 0 to 2 percent slopes	8,920	4.3
242A	Kendall silt loam, 0 to 2 percent slopes	337	0.2

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
243C2	St. Charles silt loam, 5 to 10 percent slopes, eroded	175	*
293A	Andres silt loam, 0 to 2 percent slopes	73	*
294B	Symerton silt loam, 2 to 5 percent slopes	88	*
294C2	Symerton silt loam, 5 to 10 percent slopes, eroded	3	*
318C2	Lorenzo loam, 4 to 6 percent slopes, eroded	458	0.2
318D2	Lorenzo loam, 6 to 12 percent slopes, eroded	764	0.4
324B	Ripon silt loam, 2 to 5 percent slopes	244	0.1
324C2	Ripon silt loam, 5 to 10 percent slopes, eroded	70	*
325A	Dresden silt loam, 0 to 2 percent slopes	1,852	0.9
325B	Dresden silt loam, 2 to 4 percent slopes	3,310	1.6
327B	Fox silt loam, 2 to 4 percent slopes	1,326	0.6
327C2	Fox silt loam, 4 to 6 percent slopes, eroded	1,106	0.5
330A	Peotone silty clay loam, 0 to 2 percent slopes	2,029	1.0
356A	Elpaso silty clay loam, 0 to 2 percent slopes	10,313	5.0
369A	Waupecan silt loam, 0 to 2 percent slopes	6,182	3.0
369B	Waupecan silt loam, 2 to 4 percent slopes	393	0.2
442A	Mundelein silt loam, 0 to 2 percent slopes	7,484	3.6
443A	Barrington silt loam, 0 to 2 percent slopes	1,283	0.6
443B	Barrington silt loam, 2 to 4 percent slopes	1,342	0.7
512A	Danabrook silt loam, 0 to 2 percent slopes	92	*
512B	Danabrook silt loam, 2 to 5 percent slopes	782	0.4
512C2	Danabrook silt loam, 5 to 10 percent slopes, eroded	124	*
541A	Graymont silt loam, 0 to 2 percent slopes	530	0.3
541B	Graymont silt loam, 2 to 5 percent slopes	5,694	2.8
541B2	Graymont silt loam, 2 to 5 percent slopes, eroded	693	0.3
541C2	Graymont silt loam, 5 to 10 percent slopes, eroded	793	0.4
614A	Chenoa silty clay loam, 0 to 2 percent slopes	2,466	1.2
614B	Chenoa silty clay loam, 2 to 5 percent slopes	14	*
663A	Clare silt loam, 0 to 2 percent slopes	359	0.2
663B	Clare silt loam, 2 to 5 percent slopes	718	0.3
667A	Kaneville silt loam, 0 to 2 percent slopes	810	0.4
667B	Kaneville silt loam, 2 to 5 percent slopes	385	0.2
668B	Somonauk silt loam, 2 to 5 percent slopes	845	0.4
679A	Blackberry silt loam, 0 to 2 percent slopes	5,796	2.8
679B	Blackberry silt loam, 2 to 5 percent slopes	929	0.5
680A	Campton silt loam, 0 to 2 percent slopes	1,319	0.6
680B	Campton silt loam, 2 to 5 percent slopes	924	0.4
791A	Rush silt loam, 0 to 2 percent slopes	1,291	0.6
791B	Rush silt loam, 2 to 4 percent slopes	542	0.3
802B	Orthents, loamy, undulating	618	0.3
820E	Hennepin-Casco complex, 12 to 30 percent slopes	1,252	0.6
820G	Hennepin-Casco complex, 30 to 60 percent slopes	256	0.1
864	Pits, quarry	249	0.1
865	Pits, gravel	919	0.4
969E2	Casco-Rodman complex, 12 to 20 percent slopes, eroded	328	0.2
969F	Casco-Rodman complex, 20 to 30 percent slopes	550	0.3
3082A	Millington silt loam, 0 to 2 percent slopes, frequently flooded	1,473	0.7
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	2,474	1.2
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded	505	0.2
8304A	Landes fine sandy loam, 0 to 2 percent slopes, occasionally flooded	393	0.2
8321A	Du Page silt loam, 0 to 2 percent slopes, occasionally flooded	1,309	0.6
MW	Miscellaneous water	6	*
W	Water	1,373	0.7
	Total	206,215	100.0

* Less than 0.1 percent.

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland

(See text for a description of the limitations and hazards listed in this table. Only the soils that are generally available for use as cropland or pastureland are listed. Absence of an entry indicates that the soil is generally not suited to use as cropland or pastureland)

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
44A:		
Pella	Ponding, high pH, poor tilth	Ponding, high pH, poor tilth, frost heave
59A:		
Lisbon	Wetness, high pH, restricted permeability	Wetness, high pH
60B2:		
La Rose	High pH, crusting, water erosion, restricted permeability	High pH, water erosion
60C2:		
La Rose	High pH, crusting, water erosion, restricted permeability	High pH, water erosion
60C3:		
La Rose	Poor tilth, high pH, water erosion, restricted permeability	Poor tilth, high pH, water erosion
67A:		
Harpster	Ponding, poor tilth, excess lime	Ponding, excess lime, frost heave, poor tilth
69A:		
Milford	Ponding, poor tilth, restricted permeability	Ponding, frost heave, poor tilth
88D:		
Sparta	---	Low pH, wind erosion, limited available water capacity, low fertility, excessive permeability
91A:		
Swygert	Wetness, root-restrictive layer, poor tilth, high pH, restricted permeability	Wetness, root-restrictive layer, high pH, poor tilth
91B:		
Swygert	Wetness, root-restrictive layer, poor tilth, high pH, restricted permeability, water erosion	Wetness, root-restrictive layer, high pH, poor tilth, water erosion
91B2:		
Swygert	Wetness, root-restrictive layer, poor tilth, high pH, restricted permeability, water erosion	Wetness, root-restrictive layer, poor tilth, high pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
91C2:		
Swygert	Wetness, root-restrictive layer, poor tilth, high pH, water erosion, restricted permeability	Wetness, root-restrictive layer, poor tilth, high pH, water erosion
101A:		
Brenton	Wetness	Wetness
103A:		
Houghton	Ponding, wind erosion, subsidence	Ponding, low pH, wind erosion, frost heave
104A:		
Virgil	Wetness	Wetness, low pH
134C2:		
Camden	Crusting, water erosion	Low pH, water erosion
137A:		
Clare	No major limitations	Low pH
137B:		
Clare	Water erosion	Low pH
145A:		
Saybrook	High pH, restricted permeability	High pH
145B:		
Saybrook	High pH, water erosion, restricted permeability	High pH, water erosion
145B2:		
Saybrook	High pH, water erosion, restricted permeability	High pH, water erosion
145C2:		
Saybrook	High pH, water erosion, restricted permeability	High pH, water erosion
146B:		
Elliott	Wetness, root-restrictive layer, high pH, restricted permeability, water erosion	Wetness, root-restrictive layer, high pH, water erosion
148A:		
Proctor	No major limitations	Low pH
148B:		
Proctor	Water erosion	Low pH
148C2:		
Proctor	Water erosion	Low pH, water erosion
149A:		
Brenton	Wetness	Wetness
152A:		
Drummer	Ponding, poor tilth	Ponding, frost heave, poor tilth
154A:		
Flanagan	Wetness	Wetness

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
171A:		
Catlin	No major limitations	Low pH
171B:		
Catlin	Water erosion	Low pH, water erosion
189A:		
Martinton	Wetness, high pH, restricted permeability	Wetness, high pH
189B:		
Martinton	Wetness, high pH, restricted permeability	Wetness, high pH, water erosion
191A:		
Knight	Ponding, restricted permeability	Ponding, low pH, frost heave
192A:		
Del Rey	Wetness, high pH, crusting, restricted permeability	Wetness, high pH
193A:		
Mayville	High pH, crusting, restricted permeability	High pH
193B:		
Mayville	High pH, crusting, water erosion, restricted permeability	High pH, water erosion
193C2:		
Mayville	High pH, crusting, water erosion, restricted permeability	High pH, water erosion
198A:		
Elburn	Wetness	Wetness
199A:		
Plano	No major limitations	Low pH
199B:		
Plano	Water erosion, excessive permeability	Low pH, water erosion, excessive permeability
199C2:		
Plano	Water erosion, excessive permeability	Low pH, water erosion, excessive permeability
206A:		
Thorp	Ponding, restricted permeability	Ponding, low pH, frost heave
210A:		
Lena	Ponding, excess lime, wind erosion, subsidence	Ponding, wind erosion, excess lime, frost heave
219A:		
Millbrook	Wetness	Wetness, low pH

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
223B:		
Varna	Root-restrictive layer, high pH, restricted permeability, water erosion	Root-restrictive layer, high pH, water erosion
223B2:		
Varna	Root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Root-restrictive layer, high pH, water erosion
223C2:		
Varna	Root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Root-restrictive layer, high pH, water erosion
223C3:		
Varna	Root-restrictive layer, poor tilth, high pH, water erosion, restricted permeability	Root-restrictive layer, poor tilth, high pH, water erosion
223D3:		
Varna	Root-restrictive layer, poor tilth, high pH, water erosion, restricted permeability	Root-restrictive layer, poor tilth, water erosion, high pH
224C2:		
Strawn	High pH, crusting, water erosion, restricted permeability	High pH, water erosion
224C3:		
Strawn	Poor tilth, high pH, water erosion, restricted permeability	Poor tilth, high pH, water erosion
224D2:		
Strawn	High pH, crusting, water erosion, restricted permeability	High pH, water erosion
224D3:		
Strawn	Poor tilth, high pH, water erosion, restricted permeability	Poor tilth, high pH, water erosion
224F2:		
Strawn	---	Equipment limitation, high pH, water erosion
228A:		
Nappanee	Wetness, root-restrictive layer, high pH, crusting, restricted permeability	Wetness, root-restrictive layer, high pH
228B:		
Nappanee	Wetness, root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Wetness, root-restrictive layer, high pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
232A:		
Ashkum	Ponding, poor tilth, restricted permeability	Ponding, frost heave, poor tilth
233A:		
Birkbeck	No major limitations	Low pH
234A:		
Sunbury	Wetness	Wetness
235A:		
Bryce	Ponding, poor tilth, restricted permeability	Ponding, frost heave, poor tilth
242A:		
Kendall	Wetness, crusting	Wetness, low pH
243C2:		
St. Charles	Crusting, water erosion	Low pH, water erosion
293A:		
Andres	Wetness	Wetness
294B:		
Symerton	High pH, water erosion	High pH, water erosion
294C2:		
Symerton	High pH, crusting, water erosion	High pH, water erosion
318C2:		
Lorenzo	High pH, crusting, water erosion, limited available water capacity, excessive permeability	High pH, water erosion, limited available water capacity, excessive permeability
318D2:		
Lorenzo	High pH, crusting, water erosion, limited available water capacity, excessive permeability	High pH, water erosion, limited available water capacity, excessive permeability
324B:		
Ripon	Water erosion, restricted permeability, depth to bedrock	Low pH, water erosion, depth to bedrock
324C2:		
Ripon	Water erosion, restricted permeability, depth to bedrock	Low pH, water erosion, depth to bedrock
325A:		
Dresden	High pH, excessive permeability	High pH, excessive permeability
325B:		
Dresden	High pH, water erosion, limited available water capacity, excessive permeability	High pH, water erosion, limited available water capacity, excessive permeability

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
327B:		
Fox	High pH, crusting, water erosion, excessive permeability	High pH, water erosion, excessive permeability
327C2:		
Fox	High pH, crusting, water erosion, limited available water capacity, excessive permeability	High pH, water erosion, limited available water capacity, excessive permeability
330A:		
Peotone	Ponding, poor tilth	Ponding, frost heave, poor tilth
356A:		
Elpaso	Ponding, poor tilth	Ponding, frost heave, poor tilth
369A:		
Waupecan	Excessive permeability	Excessive permeability
369B:		
Waupecan	Water erosion, excessive permeability	Excessive permeability, water erosion
442A:		
Mundelein	Wetness	Wetness
443A:		
Barrington	No major limitations	No major limitations
443B:		
Barrington	Water erosion	Water erosion
512A:		
Danabrook	No major limitations	Low pH
512B:		
Danabrook	Water erosion	Low pH, water erosion
512C2:		
Danabrook	Water erosion	Low pH, water erosion
541A:		
Graymont	High pH, restricted permeability	High pH
541B:		
Graymont	High pH, water erosion, restricted permeability	High pH, water erosion
541B2:		
Graymont	High pH, water erosion, restricted permeability	High pH, water erosion
541C2:		
Graymont	High pH, water erosion, restricted permeability	High pH, water erosion
614A:		
Chenoa	Wetness, poor tilth, high pH, restricted permeability	Wetness, high pH, poor tilth

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
614B:		
Chenoa	Wetness, poor tilth, water erosion, restricted permeability	Wetness, poor tilth, water erosion
663A:		
Clare	No major limitations	Low pH
663B:		
Clare	Water erosion	Low pH, water erosion
667A:		
Kaneville	No major limitations	No major limitations
667B:		
Kaneville	Water erosion	Water erosion
668B:		
Somonauk	Crusting, water erosion	Low pH, water erosion
679A:		
Blackberry	No major limitations	Low pH
679B:		
Blackberry	Water erosion	Low pH, water erosion
680A:		
Campton	Crusting	Low pH
680B:		
Campton	Crusting, water erosion	Low pH, water erosion
791A:		
Rush	Crusting, excessive permeability	Low pH, excessive permeability
791B:		
Rush	Crusting, water erosion, excessive permeability	Low pH, water erosion, excessive permeability
802B:		
Orthents, loamy	Crusting, water erosion	Water erosion
820E:		
Hennepin	---	Equipment limitation, high pH, water erosion
Casco	---	Equipment limitation, high pH, water erosion, excessive permeability, limited available water capacity
820G:		
Hennepin	---	Equipment limitation, high pH, water erosion
Casco	---	Equipment limitation, high pH, water erosion, excessive permeability, limited available water capacity

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
969E2:		
Casco	---	Equipment limitation, high pH, water erosion, limited available water capacity, excessive permeability
Rodman	---	Equipment limitation, water erosion, limited available water capacity, excess lime, excessive permeability
969F:		
Casco	---	Equipment limitation, high pH, water erosion, limited available water capacity, excessive permeability
Rodman	---	Equipment limitation, water erosion, limited available water capacity, excess lime, excessive permeability
3082A:		
Millington	Flooding, ponding, excess lime	Flooding, ponding, excess lime, frost heave
3107A:		
Sawmill	Flooding, ponding, poor tilth	Flooding, ponding, frost heave, poor tilth
8082A:		
Millington	Flooding, ponding, excess lime	Flooding, ponding, excess lime, frost heave
8304A:		
Landes	Flooding, excessive permeability	Flooding, excessive permeability
8321A:		
Du Page	Flooding, excess lime	Flooding, excess lime

Table 7.--Land Capability and Yields per Acre of Crops and Pasture

(Yields for corn, soybeans, winter wheat, oats, and grass-legume hay are those that can be expected under an optimum level of management. Yields for grass-legume pasture are those that can be expected under an average level of management. All yields are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
44A:							
Pella---------------	2w	162	53	62	80	4.70	6.90
59A:							
Lisbon--------------	1	173	55	68	90	5.10	7.50
60B2:							
La Rose-------------	2e	136	45	54	64	4.30	6.30
60C2:							
La Rose-------------	3e	133	44	53	62	4.20	6.10
60C3:							
La Rose-------------	4e	123	40	49	58	3.90	5.70
67A:							
Harpster------------	2w	164	52	61	80	4.86	7.20
69A:							
Milford-------------	2w	154	51	61	79	5.00	7.30
88D:							
Sparta--------------	6s	---	---	---	---	3.50	5.10
91A:							
Swygert-------------	2w	143	47	57	71	4.10	6.00
91B:							
Swygert-------------	2e	142	47	56	70	4.10	5.90
91B2:							
Swygert-------------	2e	133	44	53	66	3.80	5.50
91C2:							
Swygert-------------	3e	132	43	52	65	3.80	5.40
101A:							
Brenton-------------	1	172	53	66	93	5.00	7.40
103A:							
Houghton------------	3w	158	52	---	---	---	7.00
104A:							
Virgil--------------	1	164	50	63	87	5.00	7.30
134C2:							
Camden--------------	3e	139	43	54	73	3.99	5.80
137A:							
Clare---------------	1	161	50	62	85	5.70	8.30
137B:							
Clare---------------	2e	159	49	61	84	5.60	8.20

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
145A:							
Saybrook------------	1	162	51	62	86	5.60	8.30
145B:							
Saybrook------------	2e	160	50	61	85	5.50	8.30
145B2:							
Saybrook------------	2e	154	48	59	82	5.37	7.90
145C2:							
Saybrook------------	3e	151	47	58	80	5.25	7.70
146B:							
Elliott-------------	2e	149	50	60	77	4.50	6.60
148A:							
Proctor-------------	1	164	51	62	88	5.70	8.30
148B:							
Proctor-------------	2e	162	50	62	87	5.64	8.30
148C2:							
Proctor-------------	3e	154	48	59	83	5.36	7.70
149A:							
Brenton-------------	1	176	54	67	95	5.10	7.50
152A:							
Drummer-------------	2w	173	56	65	89	5.04	7.40
154A:							
Flanagan------------	1	175	56	69	92	5.30	7.80
171A:							
Catlin--------------	1	168	53	66	89	6.10	9.00
171B:							
Catlin--------------	2e	166	52	65	88	6.00	8.90
189A:							
Martinton-----------	2w	156	52	63	79	4.90	7.20
189B:							
Martinton-----------	2e	154	51	62	78	4.90	7.10
191A:							
Knight--------------	2w	146	48	58	76	4.80	7.00
192A:							
Del Rey-------------	2w	136	45	55	67	4.20	6.20
193A:							
Mayville------------	1	134	44	54	69	3.60	5.30
193B:							
Mayville------------	2e	133	44	53	68	3.60	5.30
193C2:							
Mayville------------	3e	125	41	50	64	3.30	4.90

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
198A:							
Elburn	1	178	55	67	85	5.20	7.67
199A:							
Plano	1	175	54	67	93	6.33	9.30
199B:							
Plano	2e	173	53	66	92	6.27	9.10
199C2:							
Plano	3e	163	50	62	87	5.89	8.60
206A:							
Thorp	2w	153	50	60	79	4.60	6.80
210A:							
Lena	3w	154	49	---	---	---	6.30
219A:							
Millbrook	1	159	50	62	84	4.80	7.00
223B:							
Varna	2e	141	45	57	70	4.40	6.40
223B2:							
Varna	2e	135	43	55	67	4.20	6.20
223C2:							
Varna	3e	133	42	55	67	4.10	6.10
223C3:							
Varna	4e	124	39	50	62	3.80	5.50
223D3:							
Varna	4e	119	38	49	60	3.70	5.50
224C2:							
Strawn	3e	118	39	47	51	2.94	4.30
224C3:							
Strawn	4e	109	36	44	47	2.70	4.00
224D2:							
Strawn	4e	110	37	44	48	2.75	4.00
224D3:							
Strawn	4e	100	33	40	43	2.50	3.60
224F2:							
Strawn	6e	---	---	---	---	2.20	3.20
228A:							
Nappanee	3w	104	37	41	44	3.60	5.30
228B:							
Nappanee	3e	103	37	41	44	3.60	5.20
232A:							
Ashkum	2w	154	51	59	77	4.60	6.80

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
233A:							
Birkbeck------------	1	151	47	60	79	4.60	6.80
234A:							
Sunbury-------------	1	162	51	63	84	4.97	7.33
235A:							
Bryce---------------	2w	146	49	58	73	4.30	6.30
242A:							
Kendall-------------	2w	155	48	60	80	4.75	7.00
243C2:							
St. Charles---------	3e	140	44	55	73	4.31	6.30
293A:							
Andres--------------	1	166	53	64	87	4.90	7.20
294B:							
Symerton------------	2e	159	50	61	81	5.50	8.30
294C2:							
Symerton------------	3e	150	47	58	76	5.20	7.70
318C2:							
Lorenzo-------------	3e	119	39	48	58	2.80	4.10
318D2:							
Lorenzo-------------	3e	114	37	46	55	2.60	3.90
324B:							
Ripon---------------	2e	134	44	54	76	3.90	5.80
324C2:							
Ripon---------------	3e	126	41	51	72	3.70	5.40
325A:							
Dresden-------------	2s	142	46	55	73	3.70	5.50
325B:							
Dresden-------------	2e	141	46	54	72	3.70	5.40
327B:							
Fox-----------------	2e	133	43	52	65	3.20	4.60
327C2:							
Fox-----------------	2e	126	40	50	62	3.00	4.40
330A:							
Peotone-------------	2w	148	49	55	70	4.50	6.70
356A:							
Elpaso--------------	2w	176	57	60	92	5.20	7.70
369A:							
Waupecan------------	1	170	53	67	92	6.20	9.20
369B:							
Waupecan------------	2e	168	52	66	91	6.10	9.10

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
442A:							
Mundelein-----------	1	169	54	67	89	4.90	7.20
443A:							
Barrington----------	1	158	51	62	85	5.30	7.80
443B:							
Barrington----------	2e	156	50	61	84	5.20	7.80
512A:							
Danabrook-----------	1	168	53	66	90	5.80	8.50
512B:							
Danabrook-----------	2e	166	52	65	89	5.70	8.40
512C2:							
Danabrook-----------	3e	156	49	61	84	5.40	7.80
541A:							
Graymont------------	1	165	53	64	85	5.40	8.00
541B:							
Graymont------------	2e	163	51	63	84	5.30	7.90
541B2:							
Graymont------------	2e	157	49	61	81	5.15	7.60
541C2:							
Graymont------------	3e	153	48	60	79	5.00	7.40
614A:							
Chenoa--------------	2w	156	51	61	82	4.60	6.80
614B:							
Chenoa--------------	2e	154	50	60	81	4.60	6.80
663A:							
Clare---------------	1	164	51	63	87	5.80	8.50
663B:							
Clare---------------	2e	162	50	62	86	5.70	8.42
667A:							
Kaneville-----------	1	161	49	61	85	5.20	7.50
667B:							
Kaneville-----------	2e	159	49	60	84	5.10	7.40
668B:							
Somonauk------------	2e	146	44	56	75	4.60	6.80
679A:							
Blackberry----------	1	177	55	67	89	5.80	8.50
679B:							
Blackberry----------	2e	175	54	66	88	5.70	8.40
680A:							
Campton-------------	1	152	47	60	79	4.60	6.80

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
680B:							
Campton	2e	150	47	59	78	4.60	6.80
791A:							
Rush	1	159	49	61	82	5.50	8.20
791B:							
Rush	2e	157	49	60	81	5.40	8.10
802B:							
Orthents, loamy	2e	93	32	35	55	3.70	4.70
820E		---	---	---	---	2.40	3.60
Hennepin	6e						
Casco	6e						
820G		---	---	---	---	---	2.20
Hennepin	7e						
Casco	7e						
864.							
Pits, quarry							
865.							
Pits, gravel							
969E2		---	---	---	---	2.40	3.50
Casco	6e						
Rodman	6s						
969F		---	---	---	---	---	3.20
Casco	7e						
Rodman	7s						
3082A:							
Millington	3w	139	44	53	64	4.10	6.20
3107A:							
Sawmill	3w	153	49	58	78	4.70	6.90
8082A:							
Millington	2w	154	49	59	71	4.60	6.80
8304A:							
Landes	2w	121	41	50	55	3.05	4.50
8321A:							
Du Page	2w	153	49	59	73	4.80	7.00

* Animal unit month: The amount of forage required to feed one mature cow, of approximately 1,000 pounds weight, with or without a calf, for 30 days.

Table 8.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
44A	Pella silty clay loam, 0 to 2 percent slopes, bedrock substratum (where drained)
59A	Lisbon silt loam, 0 to 2 percent slopes
60B2	La Rose silt loam, 2 to 5 percent slopes, eroded
67A	Harpster silty clay loam, 0 to 2 percent slopes (where drained)
69A	Milford silty clay loam, 0 to 2 percent slopes (where drained)
91A	Swygert silty clay loam, 0 to 2 percent slopes
91B	Swygert silty clay loam, 2 to 4 percent slopes
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded
91C2	Swygert silty clay loam, 4 to 6 percent slopes, eroded
101A	Brenton silt loam, 0 to 2 percent slopes, bedrock substratum
104A	Virgil silt loam, 0 to 2 percent slopes (where drained)
137A	Clare silt loam, 0 to 2 percent slopes, bedrock substratum
137B	Clare silt loam, 2 to 5 percent slopes, bedrock substratum
145A	Saybrook silt loam, 0 to 2 percent slopes
145B	Saybrook silt loam, 2 to 5 percent slopes
145B2	Saybrook silt loam, 2 to 5 percent slopes, eroded
146B	Elliott silt loam, 2 to 4 percent slopes
148A	Proctor silt loam, 0 to 2 percent slopes
148B	Proctor silt loam, 2 to 5 percent slopes
149A	Brenton silt loam, 0 to 2 percent slopes
152A	Drummer silty clay loam, 0 to 2 percent slopes (where drained)
154A	Flanagan silt loam, 0 to 2 percent slopes
171A	Catlin silt loam, 0 to 2 percent slopes
171B	Catlin silt loam, 2 to 5 percent slopes
189A	Martinton silt loam, 0 to 2 percent slopes
189B	Martinton silt loam, 2 to 4 percent slopes
191A	Knight silt loam, 0 to 2 percent slopes (where drained)
192A	Del Rey silt loam, 0 to 2 percent slopes (where drained)
193A	Mayville silt loam, 0 to 2 percent slopes
193B	Mayville silt loam, 2 to 5 percent slopes
198A	Elburn silt loam, 0 to 2 percent slopes
199A	Plano silt loam, 0 to 2 percent slopes
199B	Plano silt loam, 2 to 5 percent slopes
206A	Thorp silt loam, 0 to 2 percent slopes (where drained)
219A	Millbrook silt loam, 0 to 2 percent slopes (where drained)
223B	Varna silt loam, 2 to 4 percent slopes
223B2	Varna silt loam, 2 to 4 percent slopes, eroded
223C2	Varna silt loam, 4 to 6 percent slopes, eroded
228A	Nappanee silt loam, 0 to 2 percent slopes (where drained)
228B	Nappanee silt loam, 2 to 4 percent slopes
232A	Ashkum silty clay loam, 0 to 2 percent slopes (where drained)
233A	Birkbeck silt loam, 0 to 2 percent slopes
234A	Sunbury silt loam, 0 to 2 percent slopes
235A	Bryce silty clay, 0 to 2 percent slopes (where drained)
242A	Kendall silt loam, 0 to 2 percent slopes (where drained)
293A	Andres silt loam, 0 to 2 percent slopes
294B	Symerton silt loam, 2 to 5 percent slopes
324B	Ripon silt loam, 2 to 5 percent slopes
325A	Dresden silt loam, 0 to 2 percent slopes
325B	Dresden silt loam, 2 to 4 percent slopes
327B	Fox silt loam, 2 to 4 percent slopes
327C2	Fox silt loam, 4 to 6 percent slopes, eroded
330A	Peotone silty clay loam, 0 to 2 percent slopes (where drained)
356A	Elpaso silty clay loam, 0 to 2 percent slopes (where drained)
369A	Waupecan silt loam, 0 to 2 percent slopes
369B	Waupecan silt loam, 2 to 4 percent slopes
442A	Mundelein silt loam, 0 to 2 percent slopes
443A	Barrington silt loam, 0 to 2 percent slopes

Table 8.--Prime Farmland--Continued

Map symbol	Soil name
443B	Barrington silt loam, 2 to 4 percent slopes
512A	Danabrook silt loam, 0 to 2 percent slopes
512B	Danabrook silt loam, 2 to 5 percent slopes
541A	Graymont silt loam, 0 to 2 percent slopes
541B	Graymont silt loam, 2 to 5 percent slopes
541B2	Graymont silt loam, 2 to 5 percent slopes, eroded
614A	Chenoa silty clay loam, 0 to 2 percent slopes
614B	Chenoa silty clay loam, 2 to 5 percent slopes
663A	Clare silt loam, 0 to 2 percent slopes
663B	Clare silt loam, 2 to 5 percent slopes
667A	Kaneville silt loam, 0 to 2 percent slopes
667B	Kaneville silt loam, 2 to 5 percent slopes
668B	Somonauk silt loam, 2 to 5 percent slopes
679A	Blackberry silt loam, 0 to 2 percent slopes
679B	Blackberry silt loam, 2 to 5 percent slopes
680A	Campton silt loam, 0 to 2 percent slopes
680B	Campton silt loam, 2 to 5 percent slopes
791A	Rush silt loam, 0 to 2 percent slopes
791B	Rush silt loam, 2 to 4 percent slopes
3082A	Millington silt loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8304A	Landes fine sandy loam, 0 to 2 percent slopes, occasionally flooded
8321A	Du Page silt loam, 0 to 2 percent slopes, occasionally flooded

Table 9.--Hydric Soils

(Only those map units that have hydric components are listed. See text for a description of hydric qualities and definitions of the codes in the hydric criteria column)

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria
44A:				
Pella silty clay loam, 0 to 2 percent slopes, bedrock substratum	Pella	outwash plain, lake plain	Hydric	2B3
59A:				
Lisbon silt loam, 0 to 2 percent slopes	Lisbon	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
60B2:				
La Rose silt loam, 2 to 5 percent slopes, eroded	La Rose	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
60C2:				
La Rose silt loam, 5 to 10 percent slopes, eroded	La Rose	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
60C3:				
La Rose clay loam, 5 to 10 percent slopes, severely eroded	La Rose	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
67A:				
Harpster silty clay loam, 0 to 2 percent slopes	Harpster	ground moraine, lake plain, outwash plain, stream terrace, depression	Hydric	2B3
	Houghton	ground moraine, outwash plain, end moraine	Hydric	1,2B3
69A:				
Milford silty clay loam, 0 to 2 percent slopes	Milford	lake plain	Hydric	2B3
	Houghton	ground moraine, outwash plain	Hydric	1,2B3
91A:				
Swygert silty clay loam, 0 to 2 percent slopes	Swygert	ground moraine, end moraine	Not hydric	---
	Bryce	ground moraine, glacial lake (relict)	Hydric	2B3
91B:				
Swygert silty clay loam, 2 to 4 percent slopes	Swygert	ground moraine, end moraine	Not hydric	---
	Bryce	ground moraine, glacial lake (relict)	Hydric	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria
91B2:				
Swygert silty clay loam, 2 to 4 percent slopes, eroded	Swygert	ground moraine, end moraine	Not hydric	---
	Bryce	ground moraine, glacial lake (relict)	Hydric	2B3
91C2:				
Swygert silty clay loam, 4 to 6 percent slopes, eroded	Swygert	ground moraine, end moraine	Not hydric	---
	Bryce	ground moraine, glacial lake (relict)	Hydric	2B3
101A:				
Brenton silt loam, 0 to 2 percent slopes, bedrock substratum	Brenton	outwash plain, lake plain	Not hydric	---
	Pella	outwash plain, lake plain	Hydric	2B3
103A:				
Houghton muck, 0 to 2 percent slopes	Houghton	ground moraine, outwash plain, end moraine	Hydric	1,2B3
	Drummer	outwash plain, ground moraine	Hydric	2B3
	Lena	ground moraine, outwash plain	Hydric	1,2B3
104A:				
Virgil silt loam, 0 to 2 percent slopes	Virgil	outwash plain, ground moraine	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
134C2:				
Camden silt loam, 5 to 10 percent slopes, eroded	Camden	outwash plain, stream terrace	Not hydric	---
	Sawmill	flood plain	Hydric	2B3
145A:				
Saybrook silt loam, 0 to 2 percent slopes	Saybrook	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
145B:				
Saybrook silt loam, 2 to 5 percent slopes	Saybrook	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
145B2:				
Saybrook silt loam, 2 to 5 percent slopes, eroded	Saybrook	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
145C2:				
Saybrook silt loam, 5 to 10 percent slopes, eroded	Saybrook	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria
146B:				
Elliott silt loam, 2 to 4 percent slopes	Elliott	ground moraine, end moraine	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
148A:				
Proctor silt loam, 0 to 2 percent slopes	Proctor	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
148B:				
Proctor silt loam, 2 to 5 percent slopes	Proctor	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
148C2:				
Proctor silt loam, 5 to 10 percent slopes, eroded	Proctor	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
149A:				
Brenton silt loam, 0 to 2 percent slopes	Brenton	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
152A:				
Drummer silty clay loam, 0 to 2 percent slopes	Drummer	outwash plain, ground moraine	Hydric	2B3
	Harpster	ground moraine, lake plain, outwash plain, stream terrace, depression	Hydric	2B3
	Houghton	ground moraine, outwash plain, end moraine	Hydric	1,2B3
154A:				
Flanagan silt loam, 0 to 2 percent slopes	Flanagan	ground moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
171A:				
Catlin silt loam, 0 to 2 percent slopes	Catlin	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
171B:				
Catlin silt loam, 2 to 5 percent slopes	Catlin	ground moraine, end moraine	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
189A:				
Martinton silt loam, 0 to 2 percent slopes	Martinton	lake plain	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
	Milford	lake plain	Hydric	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria
189B:				
Martinton silt loam, 2 to 4 percent slopes	Martinton	lake plain	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
	Milford	lake plain	Hydric	2B3
191A:				
Knight silt loam, 0 to 2 percent slopes	Knight	stream terrace, outwash plain	Hydric	2B3
192A:				
Del Rey silt loam, 0 to 2 percent slopes	Del Rey	lake plain	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
	Milford	lake plain	Hydric	2B3
198A:				
Elburn silt loam, 0 to 2 percent slopes	Elburn	outwash plain, stream terrace	Not hydric	---
	Drummer	swale	Hydric	2B3
	Thorp	outwash plain, ground moraine	Hydric	2B3
199A:				
Plano silt loam, 0 to 2 percent slopes	Plano	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
	Knight	stream terrace, outwash plain	Hydric	2B3
199B:				
Plano silt loam, 2 to 5 percent slopes	Plano	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
199C2:				
Plano silt loam, 5 to 10 percent slopes, eroded	Plano	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
206A:				
Thorp silt loam, 0 to 2 percent slopes	Thorp	outwash plain, ground moraine	Hydric	2B3
210A:				
Lena muck, 0 to 2 percent slopes	Lena	ground moraine, outwash plain	Hydric	1,2B3
	Houghton	ground moraine, outwash plain, end moraine	Hydric	1,2B3
219A:				
Millbrook silt loam, 0 to 2 percent slopes	Millbrook	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria
223B:				
Varna silt loam, 2 to 4 percent slopes	Varna	ground moraine, end moraine	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
223B2:				
Varna silt loam, 2 to 4 percent slopes, eroded	Varna	ground moraine, end moraine	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
223C2:				
Varna silt loam, 4 to 6 percent slopes, eroded	Varna	ground moraine, end moraine	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
223C3:				
Varna silty clay loam, 4 to 6 percent slopes, severely eroded	Varna	ground moraine, end moraine	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
223D3:				
Varna silty clay loam, 6 to 12 percent slopes, severely eroded	Varna	ground moraine, end moraine	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
228A:				
Nappanee silt loam, 0 to 2 percent slopes	Nappanee	ground moraine, end moraine, lake plain	Not hydric	---
	Bryce	ground moraine, glacial lake (relict)	Hydric	2B3
228B:				
Nappanee silt loam, 2 to 4 percent slopes	Nappanee	ground moraine, end moraine, lake plain	Not hydric	---
	Bryce	ground moraine, glacial lake (relict)	Hydric	2B3
232A:				
Ashkum silty clay loam, 0 to 2 percent slopes	Ashkum	ground moraine, end moraine	Hydric	2B3
	Houghton	ground moraine, outwash plain, end moraine	Hydric	1,2B3
233A:				
Birkbeck silt loam, 0 to 2 percent slopes	Birkbeck	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria
234A:				
Sunbury silt loam, 0 to 2 percent slopes	Sunbury	ground moraine	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
	Elpaso	ground moraine, end moraine	Hydric	2B3
235A:				
Bryce silty clay, 0 to 2 percent slopes	Bryce	ground moraine, glacial lake (relict)	Hydric	2B3
242A:				
Kendall silt loam, 0 to 2 percent slopes	Kendall	outwash plain, stream terrace	Not hydric	---
	Drummer	swale	Hydric	2B3
293A:				
Andres silt loam, 0 to 2 percent slopes	Andres	ground moraine, lake plain	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
294B:				
Symerton silt loam, 2 to 5 percent slopes	Symerton	ground moraine, lake plain	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
294C2:				
Symerton silt loam, 5 to 10 percent slopes, eroded	Symerton	ground moraine, lake plain	Not hydric	---
	Ashkum	ground moraine, end moraine	Hydric	2B3
330A:				
Peotone silty clay loam, 0 to 2 percent slopes	Peotone	ground moraine	Hydric	2B3
	Houghton	ground moraine, outwash plain, end moraine	Hydric	1,2B3
356A:				
Elpaso silty clay loam, 0 to 2 percent slopes	Elpaso	ground moraine, end moraine	Hydric	2B3
	Harpster	ground moraine, lake plain, outwash plain, stream terrace, depression	Hydric	2B3
442A:				
Mundelein silt loam, 0 to 2 percent slopes	Mundelein	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
443A:				
Barrington silt loam, 0 to 2 percent slopes	Barrington	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria
443B:				
Barrington silt loam, 2 to 4 percent slopes	Barrington	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
512A:				
Danabrook silt loam, 0 to 2 percent slopes	Danabrook	ground moraine, end moraine	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
	Elpaso	ground moraine, end moraine	Hydric	2B3
512B:				
Danabrook silt loam, 2 to 5 percent slopes	Danabrook	ground moraine, end moraine	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
	Elpaso	ground moraine, end moraine	Hydric	2B3
512C2:				
Danabrook silt loam, 5 to 10 percent slopes, eroded	Danabrook	end moraine, ground moraine	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
	Elpaso	ground moraine, end moraine	Hydric	2B3
541A:				
Graymont silt loam, 0 to 2 percent slopes	Graymont	end moraine, ground moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
541B:				
Graymont silt loam, 2 to 5 percent slopes	Graymont	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
541B2:				
Graymont silt loam, 2 to 5 percent slopes, eroded	Graymont	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
541C2:				
Graymont silt loam, 5 to 10 percent slopes, eroded	Graymont	end moraine, ground moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
614A:				
Chenoa silty clay loam, 0 to 2 percent slopes	Chenoa	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria
614B:				
Chenoa silty clay loam, 2 to 5 percent slopes	Chenoa	ground moraine, end moraine	Not hydric	---
	Elpaso	ground moraine, end moraine	Hydric	2B3
663A:				
Clare silt loam, 0 to 2 percent slopes	Clare	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
663B:				
Clare silt loam, 2 to 5 percent slopes	Clare	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
667A:				
Kaneville silt loam, 0 to 2 percent slopes	Kaneville	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
667B:				
Kaneville silt loam, 2 to 5 percent slopes	Kaneville	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
668B:				
Somonauk silt loam, 2 to 5 percent slopes	Somonauk	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
679A:				
Blackberry silt loam, 0 to 2 percent slopes	Blackberry	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
679B:				
Blackberry silt loam, 2 to 5 percent slopes	Blackberry	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
680A:				
Campton silt loam, 0 to 2 percent slopes	Campton	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
680B:				
Campton silt loam, 2 to 5 percent slopes	Campton	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria
791A:				
Rush silt loam, 0 to 2 percent slopes	Rush	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
791B:				
Rush silt loam, 2 to 4 percent slopes	Rush	outwash plain, stream terrace	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
802B:				
Orthents, loamy, undulating	Orthents, loamy	outwash plain, ground moraine	Not hydric	---
	Drummer	outwash plain, ground moraine	Hydric	2B3
	Elpaso	ground moraine, end moraine	Hydric	2B3
3082A:				
Millington silt loam, 0 to 2 percent slopes, frequently flooded	Millington	flood plain	Hydric	2B3
	Sawmill	flood plain	Hydric	2B3
3107A:				
Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	Sawmill	flood plain	Hydric	2B3
	Millington	flood plain	Hydric	2B3
8082A:				
Millington silt loam, 0 to 2 percent slopes, occasionally flooded	Millington	flood plain	Hydric	2B3
	Sawmill	flood plain	Hydric	2B3
8321A:				
Du Page silt loam, 0 to 2 percent slopes, occasionally flooded	Du Page	flood plain	Not hydric	---
	Millington	flood plain	Hydric	2B3

Table 10.--Forestland Site Preparation and Planting Considerations

(Only the soils that are commonly used as forestland are listed. See text for descriptions of the considerations listed in this table)

Map symbol and soil name	Forestland site preparation and planting considerations
88D:	
Sparta	Water erosion
103A:	
Houghton	Wetness
104A:	
Virgil	Wetness Potential poor tilth and compaction
134C2:	
Camden	Water erosion Potential poor tilth and compaction
192A:	
Del Rey	Wetness Potential poor tilth and compaction
193A:	
Mayville	Wetness Potential poor tilth and compaction
193B:	
Mayville	Wetness Potential poor tilth and compaction
193C2:	
Mayville	Wetness Water erosion Potential poor tilth and compaction
210A:	
Lena	Wetness
219A:	
Millbrook	Wetness Potential poor tilth and compaction
224C2:	
Strawn	Wetness Water erosion Potential poor tilth and compaction
224C3:	
Strawn	Wetness Water erosion Potential poor tilth and compaction
224D2:	
Strawn	Slope Wetness Water erosion Potential poor tilth and compaction
224D3:	
Strawn	Slope Wetness Water erosion Potential poor tilth and compaction

Table 10.--Forestland Site Preparation and Planting Considerations--Continued

Map symbol and soil name	Forestland site preparation and planting considerations
224F2:	
Strawn	Slope Wetness Water erosion Potential poor tilth and compaction
228A:	
Nappanee	Wetness Potential poor tilth and compaction
228B:	
Nappanee	Wetness Potential poor tilth and compaction
233A:	
Birkbeck	Wetness Potential poor tilth and compaction
242A:	
Kendall	Wetness Potential poor tilth and compaction
243C2:	
St. Charles	Water erosion Potential poor tilth and compaction
325A:	
Dresden	Potential poor tilth and compaction
325B:	
Dresden	Potential poor tilth and compaction
327B:	
Fox	Potential poor tilth and compaction
327C2:	
Fox	Potential poor tilth and compaction
667A:	
Kaneville	Potential poor tilth and compaction
667B:	
Kaneville	Potential poor tilth and compaction
668B:	
Somonauk	Potential poor tilth and compaction
680A:	
Campton	Potential poor tilth and compaction
680B:	
Campton	Potential poor tilth and compaction
791A:	
Rush	Potential poor tilth and compaction
791B:	
Rush	Potential poor tilth and compaction

Table 10.--Forestland Site Preparation and Planting Considerations--Continued

Map symbol and soil name	Forestland site preparation and planting considerations
820E:	
Hennepin	Slope Water erosion Potential poor tilth and compaction
Casco	Slope Water erosion
820G:	
Hennepin	Slope Water erosion Potential poor tilth and compaction
Casco	Slope Water erosion
969E2:	
Casco	Slope Water erosion
Rodman	Slope Water erosion
969F:	
Casco	Slope Water erosion
Rodman	Slope Water erosion
3082A:	
Millington	Flooding Wetness
3107A:	
Sawmill	Flooding Wetness
8082A:	
Millington	Wetness
8304A:	
Landes	No major considerations
8321A:	
Du Page	No major considerations

Table 11.--Forestland Productivity

(Only the soils that are commonly used as forestland are listed. See text for definitions of terms used in this table)

Map symbol and soil name	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
88D:				
Sparta	Eastern white pine	---	---	Common hackberry, eastern redcedar, eastern white pine, red maple, red pine, shortleaf pine.
	Jack pine	---	---	
	Northern red oak	70	57	
	Red pine	---	---	
103A:				
Houghton	Silver maple	82	29	Eastern cottonwood, pin oak, swamp white oak.
	Quaking aspen	60	57	
	White ash	56	43	
	Red maple	56	29	
	Arborvitae	37	57	
	Green ash	---	---	
104A:				
Virgil	Silver maple	70	29	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	American elm	---	---	
	Shagbark hickory	---	---	
134C2:				
Camden	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	85	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
192A:				
Del Rey	Northern red oak	56	43	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	White ash	56	43	
	White oak	56	43	
	American basswood	56	43	
	Bur oak	---	---	
193A:				
Mayville	Northern red oak	78	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pin oak, white oak.
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	78	57	
193B:				
Mayville	Northern red oak	78	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pin oak, white oak.
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	78	57	
193C2:				
Mayville	Northern red oak	78	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pin oak, white oak.
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	78	57	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
210A:				
Lena	Black willow	---	---	Eastern cottonwood, pin oak, swamp white oak.
	Red maple	---	---	
	Silver maple	---	---	
	White ash	---	---	
219A:				
Millbrook	Northern red oak	80	57	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Black walnut	---	---	
	Shagbark hickory	---	---	
	White oak	80	57	
224C2:				
Strawn	Black walnut	---	---	Bur oak, chinkapin oak, common hackberry, eastern cottonwood, eastern redcedar.
	Northern red oak	80	57	
	White oak	80	57	
224C3:				
Strawn	Black walnut	---	---	Bur oak, chinkapin oak, common hackberry, eastern cottonwood, eastern redcedar.
	Northern red oak	80	57	
	White oak	80	57	
224D2:				
Strawn	Black walnut	---	---	Bur oak, chinkapin oak, common hackberry, eastern cottonwood, eastern redcedar.
	Northern red oak	80	57	
	White oak	80	57	
224D3:				
Strawn	Black walnut	---	---	Bur oak, chinkapin oak, common hackberry, eastern cottonwood, eastern redcedar.
	Northern red oak	80	57	
	White oak	80	57	
224F2:				
Strawn	Black walnut	---	---	Bur oak, chinkapin oak, common hackberry, eastern cottonwood, eastern redcedar.
	Northern red oak	80	57	
	White oak	80	57	
228A:				
Nappanee	Pin oak	85	72	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	White oak	75	72	
	American sycamore	---	---	
	Northern red oak	---	---	
	Shagbark hickory	---	---	
228B:				
Nappanee	Pin oak	85	72	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
	White oak	75	72	
	American sycamore	---	---	
	Northern red oak	---	---	
	Shagbark hickory	---	---	
233A:				
Birkbeck	White oak	86	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Green ash	---	---	
	Northern red oak	---	---	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
242A:				
Kendall	White oak	80	57	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Black walnut	---	---	
	Northern red oak	80	57	
	Tuliptree	90	86	
243C2:				
St. Charles	Green ash	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	85	72	
	Sweetgum	---	---	
	Tuliptree	95	100	
	White oak	85	72	
325A:				
Dresden	Northern red oak	70	57	Black oak, common hackberry, eastern white pine.
	American basswood	---	---	
	Black cherry	---	---	
	Black oak	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
325B:				
Dresden	Northern red oak	70	57	Black oak, common hackberry, eastern white pine.
	American basswood	---	---	
	Black cherry	---	---	
	Black oak	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
327B:				
Fox	Northern red oak	65	57	Black oak, common hackberry, eastern white pine.
	Black cherry	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
327C2:				
Fox	Northern red oak	65	57	Black oak, common hackberry, eastern white pine.
	Black cherry	---	---	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White ash	---	---	
	White oak	---	---	
667A:				
Kaneville	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	85	72	
667B:				
Kaneville	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Shagbark hickory	---	---	
	White ash	---	---	
	White oak	85	72	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
668B:				
Somonauk	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	85	72	
680A:				
Campton	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	85	72	
680B:				
Campton	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Shagbark hickory	---	---	
	Sugar maple	---	---	
	White oak	85	72	
791A:				
Rush	Northern red oak	90	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak	90	72	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
791B:				
Rush	Northern red oak	90	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
	White oak	90	72	
	Shagbark hickory	---	---	
	Sugar maple	---	---	
820E:				
Hennepin	Black oak	---	---	Bur oak, chinkapin oak, common hackberry, eastern cottonwood, eastern redcedar.
	Northern red oak	85	72	
	Shagbark hickory	---	---	
	White oak	---	---	
Casco	Black oak	---	---	Black oak, common hackberry, eastern white pine.
	Northern red oak	85	72	
	Shagbark hickory	---	---	
	White oak	---	---	
820G:				
Hennepin	Black oak	---	---	Bur oak, chinkapin oak, common hackberry, eastern cottonwood, eastern redcedar.
	Northern red oak	85	72	
	Shagbark hickory	---	---	
	White oak	---	---	
Casco	Black oak	---	---	Black oak, common hackberry, eastern white pine.
	Northern red oak	85	72	
	Shagbark hickory	---	---	
	White oak	---	---	
969E2:				
Casco	Northern red oak	55	43	Black oak, common hackberry, eastern white pine.
	Black oak	---	---	
	Shagbark hickory	---	---	

Table 11.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Suggested trees to plant
			cu ft/ac	
969E2:				
Rodman	Northern red oak	45	29	Bur oak, chinkapin oak, eastern redcedar.
	Shagbark hickory	---	---	
	White oak	---	---	
969F:				
Casco	Northern red oak	55	43	Black oak, common hackberry, eastern white pine.
	Black oak	---	---	
	Shagbark hickory	---	---	
Rodman	Northern red oak	45	29	Bur oak, chinkapin oak, eastern redcedar.
	Shagbark hickory	---	---	
	White oak	---	---	
3082A:				
Millington	American beech	---	---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar.
	American sycamore	---	---	
	Blackgum	---	---	
	Northern red oak	---	---	
	Pin oak	---	---	
	Red maple	---	---	
	Shagbark hickory	---	---	
	Swamp white oak	---	---	
	White ash	---	---	
3107A:				
Sawmill	Pin oak	90	72	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak.
	American sycamore	---	---	
	Eastern cottonwood	---	---	
8082A:				
Millington	American beech	---	---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar.
	American sycamore	---	---	
	Blackgum	---	---	
	Northern red oak	---	---	
	Pin oak	---	---	
	Red maple	---	---	
	Shagbark hickory	---	---	
	Swamp white oak	---	---	
	White ash	---	---	
8304A:				
Landes	American sycamore	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Eastern cottonwood	105	143	
	Green ash	---	---	
	Sweetgum	---	---	
	Tuliptree	95	100	
8321A:				
Du Page	Eastern cottonwood	---	---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar.
	Northern red oak	80	57	
	White ash	---	---	
	White oak	---	---	

Table 12.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
44A:					
Pella	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
59A:					
Lisbon	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
60B2, 60C2, 60C3:					
La Rose	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar	Norway spruce, common hackberry, pin oak	Carolina poplar, eastern white pine
67A:					
Harpster	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
69A:					
Milford	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
88D:					
Sparta	American hazelnut, common elderberry, common winterberry, coralberry, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, alternateleaf dogwood, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, southern arrowwood, staghorn sumac	Washington hawthorn, blue spruce, common hackberry, eastern redcedar, red maple	Carolina poplar	Eastern white pine
91A, 91B, 91B2, 91C2:					
Swygert	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
101A:					
Brenton	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
103A:					
Houghton	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae	Pin oak, river birch, swamp white oak	Carolina poplar, eastern cottonwood
104A:					
Virgil	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
134C2:					
Camden	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
137A, 137B:					
Clare	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
145A, 145B, 145B2, 145C2:					
Saybrook	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
146B:					
Elliott	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
148A:					
Proctor	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
148B:					
Proctor	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
148C2:					
Proctor	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
149A:					
Brenton	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
152A:					
Drummer	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
154A:					
Flanagan	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
171A, 171B:					
Catlin	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
189A, 189B:					
Martinton	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
191A:					
Knight	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
192A:					
Del Rey	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
193A, 193B, 193C2:					
Mayville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, eastern nannyberry, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
198A:					
Elburn	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Backhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
199A, 199B, 199C2:					
Plano	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
206A:					
Thorp	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
210A:					
Lena	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae	Pin oak, river birch, swamp white oak	Carolina poplar, eastern cottonwood
219A:					
Millbrook	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, white oak	Carolina poplar, eastern cottonwood, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
223B, 223B2, 223C2, 223C3, 223D3: Varna	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar
224C2, 224C3, 224D2, 224D3, 224F2: Strawn	American hazelnut, common winterberry, gray dogwood, redosier dogwood	Blackhaw, common chokecherry, common pawpaw, nannyberry, silky dogwood	American sycamore, arborvitae, blue spruce, bur oak, chinkapin oak, common hackberry, eastern redcedar	Carolina poplar, eastern cottonwood	---
228A, 228B: Nappanee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce	Carolina poplar

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
232A:					
Ashkum	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
233A:					
Birkbeck	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
234A:					
Sunbury	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
235A:					
Bryce	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
242A:					
Kendall	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
243C2:					
St. Charles	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
293A:					
Andres	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
294B, 294C2:					
Symerton	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
318C2, 318D2:					
Lorenzo	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
324B, 324C2:					
Ripon	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
325A, 325B:					
Dresden	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
327B, 327C2:					
Fox	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
330A:					
Peotone	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
356A:					
Elpaso	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
369A, 369B:					
Waupecan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
442A:					
Mundelein	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
443A, 443B: Barrington	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
512A, 512B, 512C2: Danabrook	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
541A, 541B, 541B2, 541C2: Graymont	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
614A, 614B: Chenoa	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
663A, 663B: Clare	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
667A, 667B: Kaneville	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
668B: Somonauk	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
679A, 679B: Blackberry	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
680A, 680B: Campton	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
791A, 791B: Rush	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
802B: Orthents, loamy	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
820E, 820G: Hennepin	American hazelnut, common winterberry, gray dogwood, redosier dogwood	Blackhaw, common chokecherry, common pawpaw, nannyberry, silky dogwood	American sycamore, arborvitae, blue spruce, bur oak, chinkapin oak, common hackberry, eastern redcedar	Carolina poplar, eastern cottonwood	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
820E, 820G:					
Casco	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
864. Pits, quarry					
865. Pits, gravel					
969E2, 969F:					
Casco	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar	---
Rodman	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak	---	---
3082A:					
Millington	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---

Table 12.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
3107A:					
Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, shingle oak	Red maple, river birch, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
8082A:					
Millington	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
8304A:					
Landes	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8321A:					
Du Page	Common winterberry, gray dogwood, redosier dogwood, silky dogwood	Blackhaw, common pawpaw, common serviceberry, downy arrowwood, roughleaf dogwood, southern arrowwood	Austrian pine, arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn, nannyberry	Carolina poplar, eastern cottonwood	---

Table 13a.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
44A:						
Pella	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
59A:						
Lisbon	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.84	Depth to saturated zone	0.98
	Slow water movement	0.84	Depth to saturated zone	0.75	Slow water movement	0.84
60B2:						
La Rose	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Slope	0.50
					Depth to saturated zone	0.16
60C2:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.84	Slow water movement	0.84	Slope	1.00
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Slow water movement	0.84
					Depth to saturated zone	0.16
60C3:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.84	Slow water movement	0.84	Slope	1.00
	Depth to saturated zone	0.16	Depth to saturated zone	0.08	Slow water movement	0.84
					Depth to saturated zone	0.16
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
88D:						
Sparta	Somewhat limited		Somewhat limited		Very limited	
	Too sandy	0.95	Too sandy	0.95	Slope	1.00
	Slope	0.04	Slope	0.04	Too sandy	0.95

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
91A:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
91B:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
					Slope	0.12
91B2:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
					Slope	0.12
91C2:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
					Slope	0.88
101A:						
Brenton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
103A:						
Houghton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
104A:						
Virgil	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
134C2:						
Camden	Not limited		Not limited		Very limited	
					Slope	1.00
137A:						
Clare	Not limited		Not limited		Not limited	
137B:						
Clare	Not limited		Not limited		Somewhat limited	
					Slope	0.12

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
145A:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
145B:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
					Slope	0.12
145B2:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
	Depth to saturated zone	0.03	Depth to saturated zone	0.02	Slope	0.50
					Depth to saturated zone	0.03
145C2:						
Saybrook	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.84	Slow water movement	0.84	Slope	1.00
					Slow water movement	0.84
146B:						
Elliott	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Slow water movement	0.96	Depth to saturated zone	1.00
	Slow water movement	0.96	Depth to saturated zone	0.88	Slow water movement	0.96
					Slope	0.12
148A:						
Proctor	Not limited		Not limited		Not limited	
148B:						
Proctor	Not limited		Not limited		Somewhat limited	
					Slope	0.28
148C2:						
Proctor	Not limited		Not limited		Very limited	
					Slope	1.00
149A:						
Brenton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
154A:						
Flanagan	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
171A:						
Catlin	Not limited		Not limited		Not limited	
171B:						
Catlin	Not limited		Not limited		Somewhat limited	
					Slope	0.28
189A:						
Martinton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
189B:						
Martinton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
					Slope	0.12
191A:						
Knight	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
192A:						
Del Rey	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Slow water movement	0.96	Depth to saturated zone	1.00
	Slow water movement	0.96	Depth to saturated zone	0.94	Slow water movement	0.96
193A:						
Mayville	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
	Depth to saturated zone	0.03	Depth to saturated zone	0.02	Depth to saturated zone	0.03
193B:						
Mayville	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
	Depth to saturated zone	0.03	Depth to saturated zone	0.02	Slope	0.28
					Depth to saturated zone	0.03
193C2:						
Mayville	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.84	Slow water movement	0.84	Slope	1.00
					Slow water movement	0.84

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
198A:						
Elburn----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
199A:						
Plano-----------------	Not limited		Not limited		Not limited	
199B:						
Plano-----------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
199C2:						
Plano-----------------	Not limited		Not limited		Very limited	
					Slope	1.00
206A:						
Thorp-----------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
210A:						
Lena------------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
219A:						
Millbrook-------------	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
223B:						
Varna-----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.12
223B2:						
Varna-----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.12
223C2:						
Varna-----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.88
223C3:						
Varna-----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.88

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
223D3:						
Varna	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
	Slope	0.04	Slope	0.04	Slow water movement	0.21
224C2:						
Strawn	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.84	Slow water movement	0.84	Slope	1.00
	Depth to saturated zone	0.20	Depth to saturated zone	0.10	Slow water movement	0.84
					Depth to saturated zone	0.20
224C3:						
Strawn	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.84	Slow water movement	0.84	Slope	1.00
	Depth to saturated zone	0.20	Depth to saturated zone	0.10	Slow water movement	0.84
					Depth to saturated zone	0.20
224D2:						
Strawn	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
	Depth to saturated zone	0.20	Depth to saturated zone	0.10	Depth to saturated zone	0.20
224D3:						
Strawn	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
	Depth to saturated zone	0.20	Depth to saturated zone	0.10	Depth to saturated zone	0.20
224F2:						
Strawn	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
	Depth to saturated zone	0.20	Depth to saturated zone	0.10	Depth to saturated zone	0.20
228A:						
Nappanee	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Depth to saturated zone	0.94	Slow water movement	1.00
228B:						
Nappanee	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slow water movement	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Depth to saturated zone	0.94	Slow water movement	1.00
					Slope	0.12

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
233A:						
Birkbeck	Not limited		Not limited		Not limited	
234A:						
Sunbury	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
235A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
242A:						
Kendall	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
243C2:						
St. Charles	Not limited		Not limited		Very limited	
					Slope	1.00
293A:						
Andres	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.78	Depth to saturated zone	0.99
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
294B:						
Symerton	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.28
294C2:						
Symerton	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
					Slow water movement	0.21
318C2:						
Lorenzo	Not limited		Not limited		Somewhat limited	
					Slope	0.88

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
318D2:						
Lorenzo	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00
324B:						
Ripon	Not limited		Not limited		Somewhat limited	
					Slope	0.28
					Depth to bedrock	0.10
324C2:						
Ripon	Not limited		Not limited		Very limited	
					Slope	1.00
					Depth to bedrock	0.35
325A:						
Dresden	Not limited		Not limited		Not limited	
325B:						
Dresden	Not limited		Not limited		Somewhat limited	
					Slope	0.12
327B:						
Fox	Not limited		Not limited		Somewhat limited	
					Slope	0.12
327C2:						
Fox	Not limited		Not limited		Somewhat limited	
					Slope	0.88
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
356A:						
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
369A:						
Waupecan	Not limited		Not limited		Not limited	
369B:						
Waupecan	Not limited		Not limited		Somewhat limited	
					Slope	0.12
442A:						
Mundelein	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
443A:						
Barrington	Not limited		Not limited		Not limited	
443B:						
Barrington	Not limited		Not limited		Somewhat limited	
					Slope	0.12

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
512A:						
Danabrook-----------	Not limited		Not limited		Not limited	
512B:						
Danabrook-----------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
512C2:						
Danabrook-----------	Not limited		Not limited		Very limited	
					Slope	1.00
541A:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
541B:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.28
541B2:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
					Slope	0.50
541C2:						
Graymont------------	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
					Slow water movement	0.96
614A:						
Chenoa--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Slow water movement	0.96	Depth to saturated zone	0.98
	Slow water movement	0.96	Depth to saturated zone	0.75	Slow water movement	0.96
614B:						
Chenoa--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.28
					Slow water movement	0.21
663A:						
Clare---------------	Not limited		Not limited		Not limited	
663B:						
Clare---------------	Not limited		Not limited		Somewhat limited	
					Slope	0.50
667A:						
Kaneville-----------	Not limited		Not limited		Not limited	

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
667B:						
Kaneville	Not limited		Not limited		Somewhat limited	
					Slope	0.28
668B:						
Somonauk	Not limited		Not limited		Somewhat limited	
					Slope	0.28
679A:						
Blackberry	Not limited		Not limited		Not limited	
679B:						
Blackberry	Not limited		Not limited		Somewhat limited	
					Slope	0.28
680A:						
Campton	Not limited		Not limited		Not limited	
680B:						
Campton	Not limited		Not limited		Somewhat limited	
					Slope	0.28
791A:						
Rush	Not limited		Not limited		Not limited	
791B:						
Rush	Not limited		Not limited		Somewhat limited	
					Slope	0.12
802B:						
Orthents, loamy	Somewhat limited		Somewhat limited		Somewhat limited	
	Slow water movement	0.21	Slow water movement	0.21	Slope	0.28
					Slow water movement	0.21
820E:						
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
Casco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
820G:						
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
Casco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
864:						
Pits, quarry	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
969E2:						
Casco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Rodman	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.02	Gravel content	0.02	Gravel content	1.00
969F:						
Casco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Rodman	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.02	Gravel content	0.02	Gravel content	1.00
3082A:						
Millington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Flooding	1.00
	Ponding	1.00	Flooding	0.40	Ponding	1.00
8082A:						
Millington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Flooding	0.60
8304A:						
Landes	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
8321A:						
Du Page	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60

Table 13b.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44A:						
Pella	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
59A:						
Lisbon	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
60B2:						
La Rose	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.08
60C2:						
La Rose	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.08
60C3:						
La Rose	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.08
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
88D:						
Sparta	Somewhat limited		Somewhat limited		Somewhat limited	
	Too sandy	0.95	Too sandy	0.95	Droughty	0.07
					Slope	0.04
91A:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
91B:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
91B2:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
91C2:						
Swygert	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
101A:						
Brenton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
103A:						
Houghton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Organic matter content	1.00	Ponding	1.00
104A:						
Virgil	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
134C2:						
Camden	Not limited		Not limited		Not limited	
137A:						
Clare	Not limited		Not limited		Not limited	
137B:						
Clare	Not limited		Not limited		Not limited	
145A:						
Saybrook	Not limited		Not limited		Not limited	
145B:						
Saybrook	Not limited		Not limited		Not limited	
145B2:						
Saybrook	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.02
145C2:						
Saybrook	Not limited		Not limited		Not limited	
146B:						
Elliott	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
148A:						
Proctor	Not limited		Not limited		Not limited	
148B:						
Proctor	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
148C2:						
Proctor	Not limited		Not limited		Not limited	
149A:						
Brenton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
154A:						
Flanagan	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
171A:						
Catlin	Not limited		Not limited		Not limited	
171B:						
Catlin	Not limited		Not limited		Not limited	
189A:						
Martinton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
189B:						
Martinton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
191A:						
Knight	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
192A:						
Del Rey	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
193A:						
Mayville	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.02
193B:						
Mayville	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.02
193C2:						
Mayville	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
198A:						
Elburn	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
199A:						
Plano	Not limited		Not limited		Not limited	
199B:						
Plano	Not limited		Not limited		Not limited	
199C2:						
Plano	Not limited		Not limited		Not limited	
206A:						
Thorp	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
210A:						
Lena	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
219A:						
Millbrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
223B:						
Varna	Not limited		Not limited		Not limited	
223B2:						
Varna	Not limited		Not limited		Not limited	
223C2:						
Varna	Not limited		Not limited		Not limited	
223C3:						
Varna	Not limited		Not limited		Not limited	
223D3:						
Varna	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
					Large stones	0.01
224C2:						
Strawn	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.10
224C3:						
Strawn	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.10

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
224D2:						
Strawn	Not limited		Not limited		Somewhat limited	
					Slope	0.96
					Depth to saturated zone	0.10
224D3:						
Strawn	Not limited		Not limited		Somewhat limited	
					Slope	0.96
					Depth to saturated zone	0.10
224F2:						
Strawn	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.02	Slope	1.00
					Depth to saturated zone	0.10
228A:						
Nappanee	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
228B:						
Nappanee	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
233A:						
Birkbeck	Not limited		Not limited		Not limited	
234A:						
Sunbury	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
235A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
242A:						
Kendall	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
243C2:						
St. Charles	Not limited		Not limited		Not limited	
293A:						
Andres	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.50	Depth to saturated zone	0.50	Depth to saturated zone	0.78

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
294B:						
Symerton------------	Not limited		Not limited		Not limited	
294C2:						
Symerton------------	Not limited		Not limited		Not limited	
318C2:						
Lorenzo-------------	Not limited		Not limited		Somewhat limited	
					Droughty	0.09
318D2:						
Lorenzo-------------	Not limited		Not limited		Somewhat limited	
					Droughty	0.24
					Slope	0.04
324B:						
Ripon---------------	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.10
324C2:						
Ripon---------------	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.35
325A:						
Dresden-------------	Not limited		Not limited		Not limited	
325B:						
Dresden-------------	Not limited		Not limited		Not limited	
327B:						
Fox-----------------	Not limited		Not limited		Not limited	
327C2:						
Fox-----------------	Not limited		Not limited		Not limited	
330A:						
Peotone-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
356A:						
Elpaso--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
369A:						
Waupecan------------	Not limited		Not limited		Not limited	
369B:						
Waupecan------------	Not limited		Not limited		Not limited	
442A:						
Mundelein-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
443A:						
Barrington----------	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
443B: Barrington	Not limited		Not limited		Not limited	
512A: Danabrook	Not limited		Not limited		Not limited	
512B: Danabrook	Not limited		Not limited		Not limited	
512C2: Danabrook	Not limited		Not limited		Not limited	
541A: Graymont	Not limited		Not limited		Not limited	
541B: Graymont	Not limited		Not limited		Not limited	
541B2: Graymont	Not limited		Not limited		Not limited	
541C2: Graymont	Not limited		Not limited		Not limited	
614A: Chenoa	Somewhat limited Depth to saturated zone	 0.44	Somewhat limited Depth to saturated zone	 0.44	Somewhat limited Depth to saturated zone	 0.75
614B: Chenoa	Somewhat limited Depth to saturated zone	 0.44	Somewhat limited Depth to saturated zone	 0.44	Somewhat limited Depth to saturated zone	 0.75
663A: Clare	Not limited		Not limited		Not limited	
663B: Clare	Not limited		Not limited		Not limited	
667A: Kaneville	Not limited		Not limited		Not limited	
667B: Kaneville	Not limited		Not limited		Not limited	
668B: Somonauk	Not limited		Not limited		Not limited	
679A: Blackberry	Not limited		Not limited		Not limited	
679B: Blackberry	Not limited		Not limited		Not limited	
680A: Campton	Not limited		Not limited		Not limited	
680B: Campton	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
791A:						
Rush	Not limited		Not limited		Not limited	
791B:						
Rush	Not limited		Not limited		Not limited	
802B:						
Orthents, loamy	Not limited		Not limited		Not limited	
820E:						
Hennepin	Somewhat limited		Not limited		Very limited	
	Slope	0.68			Slope	1.00
Casco	Somewhat limited		Not limited		Very limited	
	Slope	0.68			Slope	1.00
820G:						
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Casco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Droughty	0.17
864:						
Pits, quarry	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
969E2:						
Casco	Somewhat limited		Not limited		Very limited	
	Slope	0.02			Slope	1.00
					Droughty	0.05
Rodman	Somewhat limited		Not limited		Very limited	
	Slope	0.02			Slope	1.00
					Droughty	1.00
					Gravel content	0.02
969F:						
Casco	Very limited		Not limited		Very limited	
	Slope	1.00			Slope	1.00
					Droughty	0.34
Rodman	Very limited		Not limited		Very limited	
	Slope	1.00			Slope	1.00
					Droughty	0.94
					Gravel content	0.02
3082A:						
Millington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40	Ponding	1.00

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	0.40	Flooding	0.40	Ponding	1.00
8082A:						
Millington----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
8304A:						
Landes--------------	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
8321A:						
Du Page-------------	Not limited		Not limited		Somewhat limited	
					Flooding	0.60

Table 14.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
44A: Pella	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
59A: Lisbon	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
60B2: La Rose	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
60C2: La Rose	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
60C3: La Rose	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
67A: Harpster	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
69A: Milford	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
88D: Sparta	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
91A: Swygert	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
91B: Swygert	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
91B2: Swygert	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
91C2: Swygert	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
101A: Brenton	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
103A: Houghton	Very poor.	Poor	Poor	Poor	Very poor.	Good	Good	Poor	Poor	Good.
104A: Virgil	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
134C2: Camden	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
137A: Clare	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
137B: Clare	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
145A: Saybrook	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
145B: Saybrook	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
145B2: Saybrook	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
145C2: Saybrook	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
146B: Elliott	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
148A: Proctor	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
148B: Proctor	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
148C2: Proctor	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
149A: Brenton	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
152A: Drummer	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
154A: Flanagan	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
171A: Catlin	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
171B: Catlin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
189A: Martinton	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
189B: Martinton	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
191A: Knight	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
192A: Del Rey	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
193A: Mayville	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
193B: Mayville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
193C2: Mayville	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
198A: Elburn	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
199A: Plano	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
199B: Plano	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
199C2: Plano	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
206A: Thorp	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
210A: Lena	Very poor.	Poor	Poor	Poor	Very poor.	Good	Good	Poor	Poor	Good.
219A: Millbrook	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
223B: Varna	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
223B2: Varna	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
223C2: Varna	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
223C3: Varna	Poor	Poor	Fair	Fair	Fair	Poor	Very poor.	Poor	Fair	Very poor.
223D3: Varna	Poor	Poor	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
224C2: Strawn	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
224C3: Strawn	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
224D2: Strawn	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
224D3: Strawn	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
224F2: Strawn	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
228A: Nappanee	Fair	Good	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
228B: Nappanee	Fair	Good	Fair	Good	Good	Fair	Poor	Fair	Good	Poor.
232A: Ashkum	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
233A: Birkbeck	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
234A: Sunbury	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
235A: Bryce	Poor	Fair	Poor	Fair	Poor	Fair	Good	Fair	Fair	Fair.
242A: Kendall	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
243C2: St. Charles	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
293A: Andres	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
294B: Symerton	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
294C2: Symerton	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
318C2: Lorenzo	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
318D2: Lorenzo	Fair	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
324B: Ripon	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
324C2:										
Ripon	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
325A:										
Dresden	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
325B:										
Dresden	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
327B:										
Fox	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
327C2:										
Fox	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
330A:										
Peotone	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
356A:										
Elpaso	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
369A:										
Waupecan	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
369B:										
Waupecan	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
442A:										
Mundelein	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
443A:										
Barrington	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
443B:										
Barrington	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
512A:										
Danabrook	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
512B:										
Danabrook	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
512C2:										
Danabrook	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
541A:										
Graymont	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
541B:										
Graymont	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
541B2:										
Graymont----------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
541C2:										
Graymont----------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
614A:										
Chenoa------------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
614B:										
Chenoa------------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very. poor.
663A:										
Clare-------------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
663B:										
Clare-------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
667A:										
Kaneville---------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
667B:										
Kaneville---------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
668B:										
Somonauk----------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
679A:										
Blackberry--------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
679B:										
Blackberry--------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
680A:										
Campton-----------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
680B:										
Campton-----------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
791A:										
Rush--------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
791B:										
Rush--------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
802B:										
Orthents, loamy---	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
820E:										
Hennepin----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Casco-------------	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
820G:										
Hennepin----------	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Casco-------------	Very poor.	Poor	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
864. Pits, quarry										
865. Pits, gravel										
969E2:										
Casco-------------	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Rodman------------	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
969F:										
Casco-------------	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Rodman------------	Very poor.	Fair	Poor	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
3082A:										
Millington--------	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
3107A:										
Sawmill-----------	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
8082A:										
Millington--------	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
8304A:										
Landes------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
8321A:										
Du Page-----------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 15a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
44A:						
Pella	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Depth to hard bedrock	0.71	Shrink-swell	0.50
			Shrink-swell	0.50		
59A:						
Lisbon	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50			Shrink-swell	0.50
60B2:						
La Rose	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.16	Depth to saturated zone	1.00	Depth to saturated zone	0.16
60C2:						
La Rose	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.16	Depth to saturated zone	1.00	Slope	0.97
					Depth to saturated zone	0.16
60C3:						
La Rose	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.16	Depth to saturated zone	1.00	Slope	0.97
					Depth to saturated zone	0.16
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
88D:						
Sparta	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00
91A:						
Swygert	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
91B:						
Swygert	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
91B2:						
Swygert	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
91C2:						
Swygert	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
					Slope	0.12
101A:						
Brenton	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Depth to hard bedrock	0.96	Shrink-swell	0.50
			Shrink-swell	0.50		
103A:						
Houghton	Very limited		Very limited		Very limited	
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
104A:						
Virgil	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
134C2:						
Camden	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
137A:						
Clare	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
			Depth to hard bedrock	0.35		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
137B:						
Clare	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Depth to hard bedrock	0.93		
			Shrink-swell	0.50		
145A:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
145B:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
145B2:						
Saybrook	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.03			Depth to saturated zone	0.03
145C2:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
					Shrink-swell	0.50
146B:						
Elliott	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
148A:						
Proctor	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
148B:						
Proctor	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
148C2:						
Proctor	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
149A:						
Brenton	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
154A:						
Flanagan------------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
171A:						
Catlin--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
171B:						
Catlin--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
189A:						
Martinton-----------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
189B:						
Martinton-----------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
191A:						
Knight--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
192A:						
Del Rey-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
193A:						
Mayville------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.03			Depth to saturated zone	0.03
193B:						
Mayville------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.03			Depth to saturated zone	0.03
193C2:						
Mayville------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
					Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
198A:						
Elburn	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199A:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199B:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.27	Shrink-swell	0.27	Shrink-swell	0.27
199C2:						
Plano	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
206A:						
Thorp	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
210A:						
Lena	Very limited		Very limited		Very limited	
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
219A:						
Millbrook	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
223B:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
223B2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
223C2:						
Varna	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50	Slope	0.12

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
223C3:						
Varna	Not limited		Somewhat limited		Somewhat limited	
			Depth to saturated zone	0.99	Slope	0.12
223D3:						
Varna	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Depth to saturated zone	0.99	Slope	1.00
			Slope	0.04		
224C2:						
Strawn	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.20	Depth to saturated zone	1.00	Slope	0.97
					Depth to saturated zone	0.20
224C3:						
Strawn	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.20	Depth to saturated zone	1.00	Slope	0.97
					Depth to saturated zone	0.20
224D2:						
Strawn	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.20	Slope	0.96	Depth to saturated zone	0.20
224D3:						
Strawn	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.20	Slope	0.96	Depth to saturated zone	0.20
224F2:						
Strawn	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.20	Depth to saturated zone	1.00	Depth to saturated zone	0.20
228A:						
Nappanee	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
228B:						
Nappanee	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Ponding	1.00	Shrink-swell	1.00
	Ponding	1.00	Shrink-swell	0.50	Ponding	1.00

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
233A:						
Birkbeck------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.92	Depth to saturated zone	0.99	Shrink-swell	0.92
			Shrink-swell	0.92		
234A:						
Sunbury-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00			Shrink-swell	1.00
235A:						
Bryce---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
242A:						
Kendall-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
243C2:						
St. Charles---------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
293A:						
Andres--------------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
294B:						
Symerton------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.97	Shrink-swell	0.50
294C2:						
Symerton------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
			Shrink-swell	0.50	Shrink-swell	0.50
318C2:						
Lorenzo-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.12
318D2:						
Lorenzo-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00
324B:						
Ripon---------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
	Depth to hard bedrock	0.10	Shrink-swell	0.50	Depth to hard bedrock	0.10

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
324C2:						
Ripon---------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to hard bedrock	1.00	Slope	0.97
	Depth to hard bedrock	0.35	Shrink-swell	0.50	Shrink-swell	0.50
					Depth to hard bedrock	0.35
325A:						
Dresden-------------	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
325B:						
Dresden-------------	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
327B:						
Fox-----------------	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
327C2:						
Fox-----------------	Not limited		Not limited		Somewhat limited	
					Slope	0.12
330A:						
Peotone-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
356A:						
Elpaso--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
369A:						
Waupecan------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
369B:						
Waupecan------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
442A:						
Mundelein-----------	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50			Shrink-swell	0.50
443A:						
Barrington----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
443B:						
Barrington----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
512A:						
Danabrook-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
512B:						
Danabrook-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
512C2:						
Danabrook-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
					Shrink-swell	0.50
541A:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
541B:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
541B2:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
541C2:						
Graymont------------	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Slope	0.97
					Shrink-swell	0.50
614A:						
Chenoa--------------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98			Depth to saturated zone	0.98
614B:						
Chenoa--------------	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
	Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
663A:						
Clare---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
663B:						
Clare---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
667A:						
Kaneville	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
667B:						
Kaneville	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
668B:						
Somonauk	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
679A:						
Blackberry	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
679B:						
Blackberry	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
680A:						
Campton	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
680B:						
Campton	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Shrink-swell	0.50		
791A:						
Rush	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
791B:						
Rush	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
802B:						
Orthents, loamy	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.47		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
820E:						
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Casco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
820G:						
Hennepin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Casco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
864:						
Pits, quarry	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
969E2:						
Casco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Rodman	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
969F:						
Casco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Rodman	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
3082A:						
Millington	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
			Shrink-swell	0.50		
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8082A:						
Millington	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
			Shrink-swell	0.50		

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
8304A:						
Landes	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
8321A:						
Du Page	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.24		

Table 15b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
44A:						
Pella	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00		
	Ponding	1.00	Depth to hard bedrock	0.71		
	Shrink-swell	0.50				
59A:						
Lisbon	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
60B2:						
La Rose	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.08
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.08				
60C2:						
La Rose	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.08
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.08				
60C3:						
La Rose	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.08
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.08				
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00	Too clayey	0.01		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
88D:						
Sparta--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.04	Cutbanks cave	1.00	Droughty	0.07
			Slope	0.04	Slope	0.04
91A:						
Swygert-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.32		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				
91B:						
Swygert-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.32		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				
91B2:						
Swygert-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Too clayey	0.32		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Frost action	0.50				
91C2:						
Swygert-------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75	Too clayey	0.08		
	Frost action	0.50				
101A:						
Brenton-------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Depth to hard bedrock	0.96		
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Shrink-swell	0.50				
103A:						
Houghton------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Subsidence	1.00	Organic matter content	1.00	Ponding	1.00
	Frost action	1.00				
	Ponding	1.00	Ponding	1.00		
104A:						
Virgil--------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
134C2:						
Camden	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
137A:						
Clare	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00				
	Shrink-swell	0.50	Depth to hard bedrock	0.35		
			Cutbanks cave	0.10		
137B:						
Clare	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00				
	Shrink-swell	0.50	Depth to hard bedrock	0.93		
			Cutbanks cave	0.10		
145A:						
Saybrook	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00				
	Shrink-swell	0.50	Cutbanks cave	0.10		
145B:						
Saybrook	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00				
	Shrink-swell	0.50	Cutbanks cave	0.10		
145B2:						
Saybrook	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
	Low strength	1.00				
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.02				
145C2:						
Saybrook	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00				
	Shrink-swell	0.50	Cutbanks cave	0.10		
146B:						
Elliott	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.88
	Depth to saturated zone	0.88	Dense layer	0.50		
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
148A:						
Proctor	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
148B:						
Proctor	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
148C2:						
Proctor	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
149A:						
Brenton	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00		
	Ponding	1.00				
	Shrink-swell	0.50				
154A:						
Flanagan	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
171A:						
Catlin	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
171B:						
Catlin	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
189A:						
Martinton	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
189B:						
Martinton-----------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
191A:						
Knight--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
192A:						
Del Rey-------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.94	Too clayey	0.01		
	Shrink-swell	0.50				
193A:						
Mayville------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.02				
193B:						
Mayville------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.02
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to saturated zone	0.02				
193C2:						
Mayville------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
198A:						
Elburn--------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
199A:						
Plano---------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
199B:						
Plano	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.27				
199C2:						
Plano	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
206A:						
Thorp	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00		
	Ponding	1.00				
	Shrink-swell	0.50				
210A:						
Houghton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Subsidence	1.00	Organic matter content	1.00	Ponding	1.00
	Frost action	1.00	Ponding	1.00		
	Ponding	1.00				
219A:						
Millbrook	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	1.00		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
223B:						
Varna	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
			Too clayey	0.03		
223B2:						
Varna	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		
223C2:						
Varna	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50	Dense layer	0.50		
	Frost action	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
223C3:						
Varna---------------	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to saturated zone	0.99		
	Frost action	0.50	Dense layer	0.50		
			Cutbanks cave	0.10		
223D3:						
Varna---------------	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	0.99	Slope	0.04
	Frost action	0.50	Cutbanks cave	0.10	Large stones	0.01
	Slope	0.04	Slope	0.04		
			Too clayey	0.02		
224C2:						
Strawn--------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.10
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.10				
224C3:						
Strawn--------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.10
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.10				
224D2:						
Strawn--------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Depth to saturated zone	0.10
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.10				
224D3:						
Strawn--------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Depth to saturated zone	0.10
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.10				
224F2:						
Strawn--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.10
	Frost action	0.50	Cutbanks cave	0.10		
	Depth to saturated zone	0.10				
228A:						
Nappanee------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Dense layer	0.50		
	Depth to saturated zone	0.94	Too clayey	0.32		
	Shrink-swell	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
228B:						
Nappanee	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Dense layer	0.50		
	Depth to saturated zone	0.94	Too clayey	0.32		
	Shrink-swell	0.50	Cutbanks cave	0.10		
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Ponding	1.00				
233A:						
Birkbeck	Very limited		Very limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.92				
234A:						
Sunbury	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
235A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Too clayey	1.00
	Low strength	1.00	Too clayey	0.50	Ponding	1.00
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
242A:						
Kendall	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.94				
	Shrink-swell	0.50				
243C2:						
St. Charles	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
293A:						
Andres	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
	Depth to saturated zone	0.78	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
294B:						
Symerton	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50	Depth to saturated zone	0.97		
294C2:						
Symerton	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.99		
	Frost action	0.50	Cutbanks cave	0.10		
318C2:						
Lorenzo	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	1.00	Droughty	0.09
318D2:						
Lorenzo	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Cutbanks cave	1.00	Droughty	0.24
	Slope	0.04	Slope	0.04	Slope	0.04
324B:						
Ripon	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.10
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to hard bedrock	0.10				
324C2:						
Ripon	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.35
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Depth to hard bedrock	0.35				
325A:						
Dresden	Very limited		Very limited		Not limited	
	Low strength	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
	Frost action	0.50				
325B:						
Dresden	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
327B:						
Fox	Somewhat limited		Very limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	1.00		
	Frost action	0.50				
327C2:						
Fox	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00	Too clayey	0.02		
	Ponding	1.00				
356A:						
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
369A:						
Waupecan	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
369B:						
Waupecan	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
442A:						
Mundelein	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
443A:						
Barrington	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50				
443B:						
Barrington	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50				
512A:						
Danabrook	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Dense layer	0.50		
	Shrink-swell	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
512B:						
Danabrook-----------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Dense layer	0.50		
	Shrink-swell	0.50	Cutbanks cave	0.10		
512C2:						
Danabrook-----------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Dense layer	0.50		
	Shrink-swell	0.50	Cutbanks cave	0.10		
541A:						
Graymont------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
541B:						
Graymont------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
541B2:						
Graymont------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
541C2:						
Graymont------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
614A:						
Chenoa--------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Frost action	0.50				
614B:						
Chenoa--------------	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
	Frost action	0.50				
663A:						
Clare---------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
663B:						
Clare	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
667A:						
Kaneville	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50				
667B:						
Kaneville	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50				
668B:						
Somonauk	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50				
679A:						
Blackberry	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50				
679B:						
Blackberry	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
680A:						
Campton	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50				
680B:						
Campton	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00	Depth to saturated zone	0.99		
	Shrink-swell	0.50				
791A:						
Rush	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
791B:						
Rush	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Depth to saturated zone	0.47		
	Frost action	0.50	Cutbanks cave	0.10		
	Low strength	0.22				
820E:						
Hennepin------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.78	Cutbanks cave	0.10		
	Frost action	0.50				
Casco---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Frost action	0.50	Slope	1.00		
820G:						
Hennepin------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.78	Cutbanks cave	0.10		
	Frost action	0.50				
Casco---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Droughty	0.17
864:						
Pits, quarry--------	Not rated		Not rated		Not rated	
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
969E2:						
Casco---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Frost action	0.50	Slope	1.00	Droughty	0.05
Rodman--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
			Slope	1.00	Droughty	0.99
					Gravel content	0.02
969F:						
Casco---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Droughty	0.34
Rodman--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	1.00	Droughty	0.94
					Gravel content	0.02
3082A:						
Millington----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
8082A:						
Millington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
8304A:						
Landes	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
	Frost action	0.50	Flooding	0.60		
8321A:						
Du Page	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Depth to saturated zone	0.24		
	Frost action	0.50	Cutbanks cave	0.10		

Table 16a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
44A:				
Pella	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Depth to bedrock	0.89	Depth to hard bedrock	0.71
	Slow water movement	0.72	Seepage	0.53
59A:				
Lisbon	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
60B2:				
La Rose	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Slow water movement	1.00	Seepage	0.53
			Slope	0.32
60C2:				
La Rose	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Depth to saturated zone	0.56
			Seepage	0.53
60C3:				
La Rose	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Depth to saturated zone	0.56
			Seepage	0.53
67A:				
Harpster	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
69A:				
Milford	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
88D:				
Sparta	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Slope	1.00
	Slope	0.04		
91A:				
Swygert	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
91B:				
Swygert	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.08
91B2:				
Swygert	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.08
91C2:				
Swygert	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.68
101A:				
Brenton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	0.99	Depth to hard bedrock	0.96
	Slow water movement	0.46	Seepage	0.53
103A:				
Houghton	Very limited		Very limited	
	Depth to saturated zone	1.00	Organic matter content	1.00
	Subsidence	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Ponding	1.00	Ponding	1.00
104A:				
Virgil	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
134C2:				
Camden	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46	Slope	1.00
137A:				
Clare	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	0.75	Seepage	0.53
	Slow water movement	0.46	Depth to hard bedrock	0.35
137B:				
Clare	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	0.98	Depth to hard bedrock	0.93
	Slow water movement	0.46	Seepage	0.53
			Slope	0.08
145A:				
Saybrook	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.04
145B:				
Saybrook	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Slope	0.08
			Depth to saturated zone	0.04
145B2:				
Saybrook	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.36
			Slope	0.32
145C2:				
Saybrook	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
			Depth to saturated zone	0.04
146B:				
Elliott	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.08

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
148A:				
Proctor	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
148B:				
Proctor	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		
148C2:				
Proctor	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
			Seepage	1.00
	Slow water movement	0.46		
149A:				
Brenton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
152A:				
Drummer	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
			Ponding	1.00
	Ponding	1.00		
	Slow water movement	0.46		
154A:				
Flanagan	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
171A:				
Catlin	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
			Depth to saturated zone	0.08
	Slow water movement	1.00		
171B:				
Catlin	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.18
	Slow water movement	1.00	Depth to saturated zone	0.08

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
189A:				
Martinton-----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00		
189B:				
Martinton-----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Slope	0.08
191A:				
Knight--------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00		
192A:				
Del Rey-------------	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
193A:				
Mayville------------	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.36
193B:				
Mayville------------	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.36
			Slope	0.18
193C2:				
Mayville------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
			Depth to saturated zone	0.14
198A:				
Elburn--------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
199A:				
Plano---------------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
199B:				
Plano---------------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		
199C2:				
Plano---------------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	1.00
	Slow water movement	0.46		
206A:				
Thorp---------------	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	1.00
			Ponding	1.00
	Seepage, bottom layer	1.00		
	Ponding	1.00		
210A:				
Lena----------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Organic matter content	1.00
	Subsidence	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
219A:				
Millbrook-----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
223B:				
Varna---------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.08
			Depth to saturated zone	0.04
	Depth to saturated zone	1.00		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
223B2:				
Varna	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.08
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
223C2:				
Varna	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.68
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
223C3:				
Varna	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.68
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
223D3:				
Varna	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
	Slope	0.04		
224C2:				
Strawn	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Depth to saturated zone	0.60
			Seepage	0.53
224C3:				
Strawn	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Depth to saturated zone	0.60
			Seepage	0.53
224D2:				
Strawn	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Depth to saturated zone	0.60
	Slope	0.96	Seepage	0.53
224D3:				
Strawn	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slow water movement	1.00	Depth to saturated zone	0.60
	Slope	0.96	Seepage	0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
224F2:				
Strawn	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	0.60
	Slow water movement	1.00	Seepage	0.53
228A:				
Nappanee	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
228B:				
Nappanee	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.08
232A:				
Ashkum	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00		
233A:				
Birkbeck	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.19
234A:				
Sunbury	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.53
235A:				
Bryce	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00		
242A:				
Kendall	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
243C2:				
St. Charles	Somewhat limited		Very limited	
	Slow water movement	0.46	Slope	1.00
			Seepage	0.53
293A:				
Andres	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
294B:				
Symerton	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	1.00	Depth to saturated zone	0.01
294C2:				
Symerton	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	1.00	Depth to saturated zone	0.12
318C2:				
Lorenzo	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.68
	Seepage, bottom layer	1.00		
318D2:				
Lorenzo	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	1.00
	Seepage, bottom layer	1.00		
	Slope	0.04		
324B:				
Ripon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slow water movement	0.46		
			Seepage	0.53
			Slope	0.18
324C2:				
Ripon	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slow water movement	0.46		
			Slope	1.00
			Seepage	0.53
325A:				
Dresden	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
325B:				
Dresden	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.08
	Slow water movement	0.46		
327B:				
Fox	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.08
	Slow water movement	0.46		
327C2:				
Fox	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.68
	Slow water movement	0.46		
330A:				
Peotone	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
	Ponding	1.00		
356A:				
Elpaso	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Ponding	1.00
			Seepage	0.53
	Ponding	1.00		
369A:				
Waupecan	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
369B:				
Waupecan	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.08
	Slow water movement	0.46		
442A:				
Mundelein	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
443A:				
Barrington	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
443B:				
Barrington	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.08
	Slow water movement	0.46		
512A:				
Danabrook	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
			Depth to saturated zone	0.04
	Slow water movement	1.00		
512B:				
Danabrook	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.18
	Slow water movement	1.00	Depth to saturated zone	0.04
512C2:				
Danabrook	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
			Seepage	0.53
	Slow water movement	1.00	Depth to saturated zone	0.04
541A:				
Graymont	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.53
			Depth to saturated zone	0.12
	Depth to saturated zone	1.00		
541B:				
Graymont	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	1.00	Depth to saturated zone	0.04
541B2:				
Graymont	Very limited		Somewhat limited	
	Slow water movement	1.00	Seepage	0.53
			Slope	0.32
	Depth to saturated zone	1.00	Depth to saturated zone	0.04

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
541C2:				
Graymont	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	1.00	Depth to saturated zone	0.19
614A:				
Chenoa	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
614B:				
Chenoa	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.18
663A:				
Clare	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	0.53
	Slow water movement	0.46		
663B:				
Clare	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
			Slope	0.32
667A:				
Kaneville	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
667B:				
Kaneville	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
668B:				
Somonauk	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		
679A:				
Blackberry	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	0.53
	Slow water movement	0.46		
679B:				
Blackberry	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
680A:				
Campton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	0.53
	Slow water movement	0.46		
680B:				
Campton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.18
	Slow water movement	0.46		
791A:				
Rush	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.46		
791B:				
Rush	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.08
	Slow water movement	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
802B:				
Orthents, loamy	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.18
	Depth to saturated zone	0.94		
820E:				
Hennepin	Very limited		Very limited	
	Slow water movement	1.00	Slope	1.00
			Seepage	0.53
	Slope	1.00		
Casco	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
			Seepage	1.00
	Seepage, bottom layer	1.00		
	Slope	1.00		
820G:				
Hennepin	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	1.00	Seepage	0.53
Casco	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
			Seepage	1.00
	Slope	1.00		
	Seepage, bottom layer	1.00		
864:				
Pits, quarry	Not rated		Not rated	
865:				
Pits, gravel	Not rated		Not rated	
969E2:				
Casco	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
			Seepage	1.00
	Seepage, bottom layer	1.00		
	Slope	1.00		
Rodman	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
			Seepage	1.00
	Seepage, bottom layer	1.00		
	Slope	1.00		
969F:				
Casco	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
			Seepage	1.00
	Slope	1.00		
	Seepage, bottom layer	1.00		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
969F:				
Rodman	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
	Slope	1.00	Seepage	1.00
	Seepage, bottom layer	1.00		
3082A:				
Millington	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
3107A:				
Sawmill	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
8082A:				
Millington	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
8304A:				
Landes	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
8321A:				
Du Page	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.65	Seepage	0.53
	Slow water movement	0.46	Depth to saturated zone	0.02

Table 16b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
44A:						
Pella	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to bedrock	0.71	Depth to bedrock	0.71
	Too clayey	0.50			Too clayey	0.50
59A:						
Lisbon	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50
60B2:						
La Rose	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.56	Depth to saturated zone	0.76
60C2:						
La Rose	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.56	Depth to saturated zone	0.76
60C3:						
La Rose	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.56	Depth to saturated zone	0.76
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
88D:						
Sparta	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
	Too sandy	1.00	Slope	0.04	Seepage	1.00
	Slope	0.04			Slope	0.04

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
91A:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
91B:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
91B2:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
91C2:						
Swygert	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to saturated zone	1.00
101A:						
Brenton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Depth to bedrock	0.96	Depth to bedrock	0.96
	Too clayey	0.50			Too clayey	0.50
103A:						
Houghton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Seepage	1.00	Organic matter content	1.00
	Seepage, bottom layer	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Seepage	0.16
104A:						
Virgil	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
134C2:						
Camden	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too sandy	0.50
	Too sandy	0.50			Too clayey	0.50
					Seepage	0.22

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
137A:						
Clare	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Depth to bedrock	1.00	Depth to bedrock	0.35	Depth to bedrock	0.35
	Too clayey	0.50			Depth to saturated zone	0.24
137B:						
Clare	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	0.94
	Depth to bedrock	1.00	Depth to bedrock	0.94	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
145A:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Depth to saturated zone	0.24
145B:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Depth to saturated zone	0.24
145B2:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.36	Depth to saturated zone	0.62
145C2:						
Saybrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Depth to saturated zone	0.24
146B:						
Elliott	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
148A:						
Proctor	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
					Seepage	0.22
148B:						
Proctor	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.22
148C2:						
Proctor	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Trench sanitary landfill: Value	Area sanitary landfill: Rating class and limiting features	Area sanitary landfill: Value	Daily cover for landfill: Rating class and limiting features	Daily cover for landfill: Value
149A:						
Brenton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Too clayey	0.50
	Too clayey	0.50				
154A:						
Flanagan	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
171A:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.76	Depth to saturated zone	0.08	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.32
171B:						
Catlin	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.76	Depth to saturated zone	0.08	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.32
189A:						
Martinton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
189B:						
Martinton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
191A:						
Knight	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
192A:						
Del Rey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
193A:						
Mayville	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.36	Depth to saturated zone	0.62
193B:						
Mayville	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.36	Depth to saturated zone	0.62
193C2:						
Mayville	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.82	Depth to saturated zone	0.14	Depth to saturated zone	0.41
198A:						
Elburn	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
199A:						
Plano	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
199B:						
Plano	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
199C2:						
Plano	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
206A:						
Thorp	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00			Too clayey	0.50
	Too clayey	0.50				
210A:						
Lena	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Seepage	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00	Ponding	1.00	Organic matter content	1.00
	Organic matter content	1.00			Ponding	1.00
	Ponding	1.00			Seepage	0.52

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
219A:						
Millbrook-----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
223B:						
Varna---------------	Very limited		Somewhat limited		Very limited	
	Too clayey	1.00	Depth to saturated zone	0.04	Too clayey	1.00
	Depth to saturated zone	0.68			Depth to saturated zone	0.24
223B2:						
Varna---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
223C2:						
Varna---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
223C3:						
Varna---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
223D3:						
Varna---------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Slope	0.04	Too clayey	0.50
	Too clayey	0.50	Depth to saturated zone	0.04	Depth to saturated zone	0.24
	Slope	0.04			Slope	0.04
224C2:						
Strawn--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.60	Depth to saturated zone	0.78
224C3:						
Strawn--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.60	Depth to saturated zone	0.78
224D2:						
Strawn--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to saturated zone	0.60	Depth to saturated zone	0.78
224D3:						
Strawn--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to saturated zone	0.60	Depth to saturated zone	0.78

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
224F2:						
Strawn---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	0.60	Depth to saturated zone	0.78
228A:						
Nappanee------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	1.00
228B:						
Nappanee------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
232A:						
Ashkum--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
233A:						
Birkbeck------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.47
234A:						
Sunbury-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Too clayey	0.50
235A:						
Bryce---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Ponding	1.00	Too clayey	1.00
	Ponding	1.00			Hard to compact	1.00
					Ponding	1.00
242A:						
Kendall-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
243C2:						
St. Charles---------	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
293A:						
Andres--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
294B:						
Symerton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.53	Depth to saturated zone	0.01	Depth to saturated zone	0.14
294C2:						
Symerton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.80	Depth to saturated zone	0.12	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.38
318C2:						
Lorenzo	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
					Gravel content	0.52
	Too sandy	0.50			Too sandy	0.50
318D2:						
Lorenzo	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
			Slope	0.04	Gravel content	0.79
	Too sandy	0.50			Too sandy	0.50
	Slope	0.04			Slope	0.04
324B:						
Ripon	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Too clayey	0.50
324C2:						
Ripon	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Too clayey	0.50
325A:						
Dresden	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
					Seepage	1.00
	Too sandy	1.00				
325B:						
Dresden	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
					Seepage	1.00
	Too sandy	1.00				
327B:						
Fox	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
					Seepage	1.00
	Too sandy	1.00				
327C2:						
Fox	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
					Seepage	1.00
	Too sandy	1.00				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00	Ponding	1.00	Too clayey	1.00
	Ponding	1.00			Hard to compact	1.00
					Ponding	1.00
356A:						
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Too clayey	0.50			Too clayey	0.50
369A:						
Waupecan	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50				
369B:						
Waupecan	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50				
442A:						
Mundelein	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage, bottom layer	1.00			Seepage	0.22
443A:						
Barrington	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.24
	Seepage, bottom layer	1.00			Seepage	0.22
443B:						
Barrington	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Seepage, bottom layer	1.00			Depth to saturated zone	0.24
	Too clayey	0.50				
512A:						
Danabrook	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
512B:						
Danabrook-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
512C2:						
Danabrook-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Depth to saturated zone	0.24
541A:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.80	Depth to saturated zone	0.12	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.38
541B:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
541B2:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
541C2:						
Graymont------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.47
614A:						
Chenoa--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
614B:						
Chenoa--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
663A:						
Clare---------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.24
	Seepage, bottom layer	1.00				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
663B:						
Clare	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
667A:						
Kaneville	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Seepage, bottom layer	1.00			Depth to saturated zone	0.24
	Too clayey	0.50				
667B:						
Kaneville	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Seepage, bottom layer	1.00			Depth to saturated zone	0.24
	Too clayey	0.50				
668B:						
Somonauk	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.24
	Seepage, bottom layer	1.00				
679A:						
Blackberry	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Seepage, bottom layer	1.00			Depth to saturated zone	0.24
	Too clayey	0.50				
679B:						
Blackberry	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
680A:						
Campton	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Seepage, bottom layer	1.00			Depth to saturated zone	0.24
	Too clayey	0.50				
680B:						
Campton	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Seepage, bottom layer	1.00			Depth to saturated zone	0.24
	Too clayey	0.50				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
791A:						
Rush----------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
791B:						
Rush----------------	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
802B:						
Orthents, loamy-----	Not limited		Not limited		Not limited	
820E:						
Hennepin------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Casco---------------	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
			Slope	1.00	Seepage	1.00
	Too sandy	1.00			Slope	1.00
	Slope	1.00			Gravel content	0.89
820G:						
Hennepin------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Casco---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
					Seepage	1.00
	Too sandy	1.00			Gravel content	1.00
864:						
Pits, quarry--------	Not rated		Not rated		Not rated	
865:						
Pits, gravel--------	Not rated		Not rated		Not rated	
969E2:						
Casco---------------	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
			Slope	1.00	Seepage	1.00
	Too sandy	1.00			Slope	1.00
	Slope	1.00			Gravel content	0.20
Rodman--------------	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
			Slope	1.00	Gravel content	1.00
	Slope	1.00			Slope	1.00
	Too sandy	0.50			Too sandy	0.50
969F:						
Casco---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	1.00
					Seepage	1.00
	Too sandy	1.00			Gravel content	0.34

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
969F:						
Rodman--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
					Gravel content	1.00
	Too sandy	0.50			Too sandy	0.50
3082A:						
Millington----------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00		
3107A:						
Sawmill-------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Too clayey	0.50
	Too clayey	0.50				
8082A:						
Millington----------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00		
8304A:						
Landes--------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Too sandy	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	1.00
	Too sandy	1.00				
8321A:						
Du Page-------------	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		

Table 17a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
44A:				
Pella	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
59A:				
Lisbon	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
60B2:				
La Rose	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
60C2:				
La Rose	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
60C3:				
La Rose	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
67A:				
Harpster	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
69A:				
Milford	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
88D:				
Sparta	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.30
91A:				
Swygert	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
91B:				
Swygert	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
91B2:				
Swygert	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
91C2:				
Swygert	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
101A:				
Brenton	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
103A:				
Houghton	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
104A:				
Virgil	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
134C2:				
Camden	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
137A:				
Clare	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
137B:				
Clare	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
145A:				
Saybrook	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
145B:				
Saybrook	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
145B2:				
Saybrook	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
145C2:				
Saybrook	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
146B:				
Elliott	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
148A:				
Proctor	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
148B:				
Proctor	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
148C2:				
Proctor	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
149A:				
Brenton	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
152A:				
Drummer	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
154A:				
Flanagan	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
171A:				
Catlin	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
171B:				
Catlin	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
189A:				
Martinton	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
189B:				
Martinton	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
191A:				
Knight	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
192A:				
Del Rey	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
193A:				
Mayville	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
193B:				
Mayville	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
193C2:				
Mayville	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
198A:				
Elburn	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
199A:				
Plano	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
199B:				
Plano	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
199C2:				
Plano	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
206A:				
Thorp	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
210A:				
Lena	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
219A:				
Millbrook	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
223B:				
Varna	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
223B2:				
Varna---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
223C2:				
Varna---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
223C3:				
Varna---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
223D3:				
Varna---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
224C2:				
Strawn--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
224C3:				
Strawn--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
224D2:				
Strawn--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
224D3:				
Strawn--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
224F2:				
Strawn--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
228A:				
Nappanee------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
228B:				
Nappanee------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
232A:				
Ashkum--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
233A:				
Birkbeck	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
234A:				
Sunbury	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
235A:				
Bryce	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
242A:				
Kendall	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
243C2:				
St. Charles	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
293A:				
Andres	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
294B:				
Symerton	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
294C2:				
Symerton	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
318C2:				
Lorenzo	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.16	Bottom layer	0.30
318D2:				
Lorenzo	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.31	Bottom layer	0.30
324B:				
Ripon	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
324C2:				
Ripon	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
325A:				
Dresden	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.01	Bottom layer	0.24
325B:				
Dresden	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.24
327B:				
Fox	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.30
327C2:				
Fox	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.30
330A:				
Peotone	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
356A:				
Elpaso	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
369A:				
Waupecan	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.30
369B:				
Waupecan	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.01	Bottom layer	0.51
442A:				
Mundelein	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
443A:				
Barrington	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
443B:				
Barrington	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
512A:				
Danabrook	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
512B:				
Danabrook-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
512C2:				
Danabrook-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
541A:				
Graymont------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
541B:				
Graymont------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
541B2:				
Graymont------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
541C2:				
Graymont------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
614A:				
Chenoa--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
614B:				
Chenoa--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
663A:				
Clare---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
663B:				
Clare---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
667A:				
Kaneville-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
667B:				
Kaneville-----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
668B:				
Somonauk------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
679A:				
Blackberry----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
679B:				
Blackberry----------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
680A:				
Campton-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
680B:				
Campton-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
791A:				
Rush----------------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.27
791B:				
Rush----------------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.27
802B:				
Orthents, loamy-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
820E:				
Hennepin------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Casco---------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.24	Bottom layer	0.20
820G:				
Hennepin------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Casco---------------	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.16	Bottom layer	0.16
864:				
Pits, quarry--------	Not rated		Not rated	

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
865:				
Pits, gravel	Not rated		Not rated	
969E2:				
Casco	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.20	Bottom layer	0.30
Rodman	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.40	Bottom layer	0.63
969F:				
Casco	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.20	Bottom layer	0.30
Rodman	Fair		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.40	Bottom layer	0.63
3082A:				
Millington	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3107A:				
Sawmill	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8082A:				
Millington	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8304A:				
Landes	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.76
8321A:				
Du Page	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44A:						
Pella	Fair		Poor		Poor	
	Carbonate content	0.80	Wetness	0.00	Wetness	0.00
	Too clayey	0.98	Low strength	0.00	Too clayey	0.81
	Water erosion	0.99	Depth to bedrock	0.29		
			Shrink-swell	0.97		
59A:						
Lisbon	Fair		Fair		Fair	
	Low content of organic matter	0.12	Wetness	0.14	Wetness	0.14
			Low strength	0.78		
	Carbonate content	0.46	Shrink-swell	0.99		
	Water erosion	0.90				
60B2:						
La Rose	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Wetness	0.68
			Wetness	0.68		
	Water erosion	0.90				
	Carbonate content	0.92				
60C2:						
La Rose	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Wetness	0.68
			Wetness	0.68		
	Water erosion	0.90				
	Carbonate content	0.92				
60C3:						
La Rose	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Wetness	0.68
			Wetness	0.68		
	Water erosion	0.90				
	Carbonate content	0.92				
67A:						
Harpster	Fair		Poor		Poor	
	Carbonate content	0.80	Wetness	0.00	Wetness	0.00
	Too clayey	0.92	Low strength	0.00	Too clayey	0.72
	Water erosion	0.99	Shrink-swell	0.99	Carbonate content	0.96
69A:						
Milford	Fair		Poor		Poor	
	Too clayey	0.05	Wetness	0.00	Wetness	0.00
	Too acid	0.99	Low strength	0.00	Too clayey	0.04
	Water erosion	0.99	Shrink-swell	0.72		
88D:						
Sparta	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Wind erosion	0.00			Slope	0.96
	Low content of organic matter	0.68				
	Too acid	0.74				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
91A:						
Swygert	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.12	Wetness	0.14	Wetness	0.14
			Shrink-swell	0.24		
	Carbonate content	0.80				
	Too acid	0.97				
91B:						
Swygert	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.12	Wetness	0.14	Wetness	0.14
			Shrink-swell	0.33		
	Carbonate content	0.80				
	Too acid	0.97				
91B2:						
Swygert	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Carbonate content	0.80	Wetness	0.14	Wetness	0.14
	Low content of organic matter	0.92	Shrink-swell	0.26		
91C2:						
Swygert	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.08	Wetness	0.14	Wetness	0.14
			Shrink-swell	0.47		
	Carbonate content	0.80				
	Water erosion	0.99				
101A:						
Brenton	Fair		Poor		Fair	
	Water erosion	0.99	Low strength	0.00	Wetness	0.14
	Too acid	0.99	Depth to bedrock	0.04		
			Wetness	0.14		
			Shrink-swell	0.92		
103A:						
Houghton	Poor		Poor		Poor	
	Wind erosion	0.00	Wetness	0.00	Wetness	0.00
	Too acid	0.88			High content of organic matter	0.00
104A:						
Virgil	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Wetness	0.04
			Wetness	0.04	Too clayey	0.67
	Water erosion	0.90	Shrink-swell	0.91		
	Too acid	0.97				
	Too clayey	0.98				
134C2:						
Camden	Fair		Good		Fair	
	Low content of organic matter	0.12			Too clayey	0.49
	Too clayey	0.82				
	Water erosion	0.90				
	Too acid	0.97				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
137A:						
Clare	Fair		Poor		Fair	
	Too acid	0.97	Low strength	0.00	Wetness	0.98
	Water erosion	0.99	Depth to bedrock	0.65		
			Shrink-swell	0.92		
			Wetness	0.98		
137B:						
Clare	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Too clayey	0.68
	Too acid	0.97	Depth to bedrock	0.07	Wetness	0.98
	Water erosion	0.99	Shrink-swell	0.93		
			Wetness	0.98		
145A:						
Saybrook	Fair		Fair		Fair	
	Low content of organic matter	0.02	Low strength	0.22	Too clayey	0.66
			Wetness	0.98	Wetness	0.98
	Water erosion	0.90				
	Too clayey	0.92				
145B:						
Saybrook	Fair		Fair		Fair	
	Low content of organic matter	0.02	Low strength	0.22	Too clayey	0.66
			Wetness	0.98	Wetness	0.98
	Water erosion	0.90				
	Too clayey	0.92				
	Too acid	0.95				
145B2:						
Saybrook	Fair		Fair		Fair	
	Low content of organic matter	0.02	Low strength	0.22	Wetness	0.80
			Wetness	0.80		
	Water erosion	0.90				
	Too acid	0.92				
145C2:						
Saybrook	Fair		Fair		Fair	
	Low content of organic matter	0.02	Low strength	0.22	Wetness	0.98
			Wetness	0.98		
	Water erosion	0.90				
146B:						
Elliott	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Wetness	0.07
			Wetness	0.07	Too clayey	0.55
	Carbonate content	0.84	Shrink-swell	0.99		
	Water erosion	0.90				
	Too clayey	0.92				
148A:						
Proctor	Fair		Fair		Good	
	Low content of organic matter	0.12	Shrink-swell	0.98		
	Too acid	0.84				
	Water erosion	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
148B:						
Proctor------------	Fair		Good		Fair	
	Low content of organic matter	0.24			Too clayey	0.81
	Too clayey	0.98				
	Water erosion	0.99				
148C2:						
Proctor------------	Fair		Poor		Fair	
	Too clayey	0.98	Low strength	0.00	Too clayey	0.81
	Water erosion	0.99	Shrink-swell	0.96		
149A:						
Brenton------------	Fair		Fair		Fair	
	Water erosion	0.99	Wetness	0.14	Wetness	0.14
			Low strength	0.22		
			Shrink-swell	0.99		
152A:						
Drummer------------	Fair		Poor		Poor	
	Carbonate content	0.92	Wetness	0.00	Wetness	0.00
	Water erosion	0.99	Low strength	0.00		
			Shrink-swell	0.97		
154A:						
Flanagan-----------	Fair		Poor		Fair	
	Too clayey	0.18	Low strength	0.00	Too clayey	0.13
	Carbonate content	0.68	Wetness	0.14	Wetness	0.14
	Too acid	0.84	Shrink-swell	0.90		
	Low content of organic matter	0.88				
	Water erosion	0.99				
171A:						
Catlin-------------	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Too clayey	0.64
	Too acid	0.97	Wetness	0.95	Wetness	0.95
	Water erosion	0.99	Shrink-swell	0.96		
171B:						
Catlin-------------	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Too clayey	0.64
	Too acid	0.97	Shrink-swell	0.90	Wetness	0.95
	Water erosion	0.99	Wetness	0.95		
189A:						
Martinton----------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.02
	Carbonate content	0.97	Wetness	0.14	Wetness	0.14
	Water erosion	0.99	Shrink-swell	0.89		
	Too acid	0.99				
189B:						
Martinton----------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.02
	Low content of organic matter	0.12	Wetness	0.14	Wetness	0.14
			Shrink-swell	0.87		
	Carbonate content	0.97				
	Water erosion	0.99				
	Too acid	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
191A:						
Knight	Fair		Poor		Poor	
	Low content of organic matter	0.12	Wetness	0.00	Wetness	0.00
	Water erosion	0.90	Low strength	0.00	Too clayey	0.57
	Too clayey	0.98	Shrink-swell	0.97		
192A:						
Del Rey	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.50	Wetness	0.04	Wetness	0.04
	Too acid	0.61	Shrink-swell	0.87	Too acid	0.99
	Carbonate content	0.80				
	Water erosion	0.99				
193A:						
Mayville	Fair		Fair		Fair	
	Low content of organic matter	0.12	Low strength	0.78	Wetness	0.80
	Water erosion	0.68	Wetness	0.80		
	Too acid	0.84				
	Carbonate content	0.99				
193B:						
Mayville	Fair		Fair		Fair	
	Low content of organic matter	0.12	Wetness	0.80	Wetness	0.80
	Water erosion	0.68				
	Too acid	0.84				
193C2:						
Mayville	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Wetness	0.92
	Too acid	0.84	Wetness	0.92		
	Water erosion	0.90				
	Carbonate content	0.99				
198A:						
Elburn	Fair		Poor		Fair	
	Too clayey	0.98	Low strength	0.00	Wetness	0.14
	Water erosion	0.99	Wetness	0.14	Too clayey	0.81
			Shrink-swell	0.99		
199A:						
Plano	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.67
	Too acid	0.97	Shrink-swell	0.98		
	Too clayey	0.98				
	Water erosion	0.99				
199B:						
Plano	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.67
	Too acid	0.92	Shrink-swell	0.99		
	Too clayey	0.98				
	Water erosion	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
199C2:						
Plano	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.67
			Shrink-swell	0.99		
	Too acid	0.97				
	Too clayey	0.98				
	Water erosion	0.99				
206A:						
Thorp	Fair		Poor		Poor	
	Low content of organic matter	0.68	Wetness	0.00	Wetness	0.00
			Low strength	0.00		
	Water erosion	0.90	Shrink-swell	0.99		
	Too acid	0.97				
210A:						
Lena	Poor		Poor		Poor	
	Wind erosion	0.00	Wetness	0.00	Wetness	0.00
	Carbonate content	0.80			High content of organic matter	0.00
					Carbonate content	0.80
219A:						
Millbrook	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Wetness	0.04
			Wetness	0.04		
	Water erosion	0.99	Shrink-swell	0.93		
223B:						
Varna	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Carbonate content	0.97	Shrink-swell	0.97	Wetness	0.98
	Water erosion	0.99	Wetness	0.98		
	Too acid	0.99				
223B2:						
Varna	Fair		Poor		Fair	
	Too clayey	0.08	Low strength	0.00	Too clayey	0.06
	Low content of organic matter	0.12	Wetness	0.98	Wetness	0.98
			Shrink-swell	0.99		
	Water erosion	0.90				
	Carbonate content	0.97				
223C2:						
Varna	Fair		Poor		Fair	
	Too clayey	0.08	Low strength	0.00	Too clayey	0.06
	Low content of organic matter	0.68	Shrink-swell	0.95	Wetness	0.98
			Wetness	0.98		
	Carbonate content	0.97				
	Water erosion	0.99				
223C3:						
Varna	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.44
			Wetness	0.98	Wetness	0.98
	Too clayey	0.76				
	Water erosion	0.90				
	Carbonate content	0.97				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
223D3:						
Varna---------------	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Too clayey	0.41
			Wetness	0.98	Slope	0.96
	Too clayey	0.68			Wetness	0.98
	Water erosion	0.90				
	Carbonate content	0.97				
224C2:						
Strawn--------------	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Wetness	0.65
			Wetness	0.65	Rock fragments	0.88
	Water erosion	0.90				
	Carbonate content	0.97				
224C3:						
Strawn--------------	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Wetness	0.65
			Wetness	0.65	Too clayey	0.67
	Water erosion	0.90			Rock fragments	0.88
	Carbonate content	0.97				
	Too clayey	0.98				
224D2:						
Strawn--------------	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Slope	0.04
			Wetness	0.65	Wetness	0.65
	Water erosion	0.90			Rock fragments	0.88
	Carbonate content	0.97				
224D3:						
Strawn--------------	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Slope	0.04
			Wetness	0.65	Wetness	0.65
	Water erosion	0.90			Rock fragments	0.88
	Carbonate content	0.97				
224F2:						
Strawn--------------	Fair		Poor		Poor	
	Low content of organic matter	0.24	Slope	0.00	Slope	0.00
			Low strength	0.00	Wetness	0.65
	Water erosion	0.90	Wetness	0.65	Rock fragments	0.88
	Carbonate content	0.97				
228A:						
Nappanee------------	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.12	Wetness	0.04	Wetness	0.04
			Shrink-swell	0.87		
	Carbonate content	0.68				
	Water erosion	0.99				
228B:						
Nappanee------------	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.24	Wetness	0.04	Wetness	0.04
			Shrink-swell	0.87		
	Carbonate content	0.68				
	Water erosion	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
232A:						
Ashkum	Poor		Poor		Poor	
	Too clayey	0.00	Wetness	0.00	Wetness	0.00
	Low content of organic matter	0.18	Low strength	0.00	Too clayey	0.00
	Carbonate content	0.97	Shrink-swell	0.60		
	Water erosion	0.99				
233A:						
Birkbeck	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.54
	Water erosion	0.68	Wetness	0.89	Wetness	0.89
	Too acid	0.74	Shrink-swell	0.91		
	Too clayey	0.82				
	Carbonate content	0.95				
234A:						
Sunbury	Fair		Fair		Fair	
	Low content of organic matter	0.12	Wetness	0.04	Wetness	0.04
	Too clayey	0.18	Shrink-swell	0.88	Too clayey	0.11
	Water erosion	0.68				
	Too acid	0.84				
235A:						
Bryce	Poor		Poor		Poor	
	Too clayey	0.00	Wetness	0.00	Too clayey	0.00
	Too acid	0.97	Low strength	0.00	Wetness	0.00
	Carbonate content	0.97	Shrink-swell	0.14		
242A:						
Kendall	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Wetness	0.04
	Too acid	0.61	Wetness	0.04	Too clayey	0.57
	Water erosion	0.68	Shrink-swell	0.95	Too acid	0.99
	Too clayey	0.98				
243C2:						
St. Charles	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.88	Shrink-swell	0.99		
	Water erosion	0.90				
	Too clayey	0.98				
293A:						
Andres	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Wetness	0.12
	Carbonate content	0.84	Wetness	0.12	Too clayey	0.64
	Water erosion	0.99	Shrink-swell	0.96		
294B:						
Symerton	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Rock fragments	0.12
	Too acid	0.84	Wetness	0.99	Wetness	0.99
	Water erosion	0.90				
	Carbonate content	0.97				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
294C2:						
Symerton	Fair		Fair		Fair	
	Low content of organic matter	0.68	Wetness	0.93	Wetness	0.93
	Too acid	0.84	Shrink-swell	0.99		
	Carbonate content	0.97				
	Water erosion	0.99				
318C2:						
Lorenzo	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Low content of organic matter	0.12			Rock fragments	0.00
	Droughty	0.33			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.46			Carbonate content	0.99
318D2:						
Lorenzo	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Low content of organic matter	0.12			Rock fragments	0.00
	Droughty	0.20			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.46			Carbonate content	0.76
					Slope	0.96
324B:						
Ripon	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Too acid	0.84	Depth to bedrock	0.00	Depth to bedrock	0.90
	Depth to bedrock	0.90	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
324C2:						
Ripon	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Depth to bedrock	0.65	Depth to bedrock	0.00	Depth to bedrock	0.65
	Too acid	0.84	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
325A:						
Dresden	Fair		Good		Fair	
	Low content of organic matter	0.12			Hard to reclaim (rock fragments)	0.32
	Carbonate content	0.46				
	Too acid	0.99				
325B:						
Dresden	Fair		Good		Fair	
	Low content of organic matter	0.12			Hard to reclaim (rock fragments)	0.92
	Carbonate content	0.46				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
327B:						
Fox----------------	Fair		Good		Fair	
	Low content of organic matter	0.12			Rock fragments	0.50
	Carbonate content	0.68			Too clayey	0.53
	Too clayey	0.92			Hard to reclaim (rock fragments)	0.92
	Water erosion	0.99				
327C2:						
Fox----------------	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Low content of organic matter	0.12			Rock fragments	0.00
	Carbonate content	0.68			Hard to reclaim (rock fragments)	0.92
	Droughty	0.99				
330A:						
Peotone------------	Poor		Poor		Poor	
	Too clayey	0.00	Wetness	0.00	Wetness	0.00
	Water erosion	0.99	Low strength	0.00	Too clayey	0.00
			Shrink-swell	0.12		
356A:						
Elpaso-------------	Fair		Poor		Poor	
	Low content of organic matter	0.24	Wetness	0.00	Wetness	0.00
	Too acid	0.92	Low strength	0.00	Too clayey	0.98
	Too clayey	0.98	Shrink-swell	0.87		
	Carbonate content	0.99				
	Water erosion	0.99				
369A:						
Waupecan-----------	Fair		Poor		Good	
	Too acid	0.84	Low strength	0.00		
	Low content of organic matter	0.88				
	Water erosion	0.99				
369B:						
Waupecan-----------	Fair		Poor		Poor	
	Low content of organic matter	0.88	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
	Too acid	0.97	Shrink-swell	0.99		
	Water erosion	0.99				
442A:						
Mundelein----------	Fair		Fair		Fair	
	Low content of organic matter	0.02	Wetness	0.14	Wetness	0.14
	Carbonate content	0.97				
	Water erosion	0.99				
443A:						
Barrington---------	Fair		Fair		Fair	
	Low content of organic matter	0.02	Wetness	0.98	Wetness	0.98
	Carbonate content	0.97				
	Water erosion	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
443B:						
Barrington	Fair		Poor		Fair	
	Carbonate content	0.97	Low strength	0.00	Wetness	0.98
	Water erosion	0.99	Wetness	0.98		
512A:						
Danabrook	Fair		Fair		Fair	
	Low content of organic matter	0.24	Low strength	0.22	Wetness	0.98
			Wetness	0.98		
	Carbonate content	0.46	Shrink-swell	0.98		
	Too acid	0.84				
	Water erosion	0.99				
512B:						
Danabrook	Fair		Poor		Fair	
	Carbonate content	0.46	Low strength	0.00	Wetness	0.98
	Water erosion	0.99	Shrink-swell	0.97		
			Wetness	0.98		
512C2:						
Danabrook	Fair		Fair		Fair	
	Low content of organic matter	0.24	Wetness	0.98	Wetness	0.98
			Shrink-swell	0.99		
	Carbonate content	0.54				
	Too acid	0.97				
	Water erosion	0.99				
541A:						
Graymont	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.58
			Wetness	0.93	Wetness	0.93
	Water erosion	0.90				
	Carbonate content	0.97				
	Too clayey	0.98				
541B:						
Graymont	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Wetness	0.98
			Wetness	0.98		
	Water erosion	0.90	No shrink-swell limitation	0.99		
	Carbonate content	0.97				
	Too acid	0.99				
541B2:						
Graymont	Fair		Poor		Fair	
	Low content of organic matter	0.08	Low strength	0.00	Wetness	0.98
			Shrink-swell	0.87		
	Water erosion	0.90	Wetness	0.98		
	Carbonate content	0.97				
541C2:						
Graymont	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Wetness	0.89
			Wetness	0.89		
	Water erosion	0.90	Shrink-swell	0.99		
	Carbonate content	0.97				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
614A:						
Chenoa--------------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.14
	Too clayey	0.18	Wetness	0.14	Wetness	0.14
	Carbonate content	0.84	Shrink-swell	0.90		
	Water erosion	0.90				
614B:						
Chenoa--------------	Fair		Poor		Fair	
	Low content of organic matter	0.18	Low strength	0.00	Wetness	0.14
	Carbonate content	0.84	Wetness	0.14		
	Too acid	0.92	Shrink-swell	0.87		
	Water erosion	0.99				
663A:						
Clare---------------	Fair		Fair		Fair	
	Low content of organic matter	0.68	Low strength	0.22	Wetness	0.98
	Too acid	0.97	Shrink-swell	0.89		
	Water erosion	0.99	Wetness	0.98		
663B:						
Clare---------------	Fair		Poor		Fair	
	Too clayey	0.82	Low strength	0.00	Too clayey	0.68
	Too acid	0.84	Wetness	0.98	Wetness	0.98
	Water erosion	0.99	Shrink-swell	0.99		
667A:						
Kaneville-----------	Fair		Poor		Fair	
	Low content of organic matter	0.82	Low strength	0.00	Wetness	0.98
	Water erosion	0.99	Shrink-swell	0.90		
			Wetness	0.98		
667B:						
Kaneville-----------	Fair		Poor		Fair	
	Low content of organic matter	0.82	Low strength	0.00	Wetness	0.98
	Water erosion	0.99	Shrink-swell	0.94		
			Wetness	0.98		
668B:						
Somonauk------------	Fair		Fair		Fair	
	Low content of organic matter	0.08	Shrink-swell	0.91	Wetness	0.98
	Water erosion	0.90	Wetness	0.98		
	Too acid	0.97				
679A:						
Blackberry----------	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Wetness	0.98
	Too acid	0.97	Shrink-swell	0.89	Hard to reclaim (rock fragments)	0.99
	Water erosion	0.99	Wetness	0.98		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
679B:						
Blackberry----------	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.63
	Too acid	0.92	Wetness	0.98	Wetness	0.98
	Too clayey	0.92	Shrink-swell	0.98		
	Water erosion	0.99				
680A:						
Campton-------------	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Wetness	0.98
	Too acid	0.88	Shrink-swell	0.87		
	Water erosion	0.90	Wetness	0.98		
680B:						
Campton-------------	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Wetness	0.98
	Too acid	0.88	Shrink-swell	0.94		
	Water erosion	0.90	Wetness	0.98		
791A:						
Rush----------------	Fair		Poor		Fair	
	Water erosion	0.68	Low strength	0.00	Hard to reclaim (rock fragments)	0.68
	Too acid	0.68	Shrink-swell	0.98		
	Carbonate content	0.80				
	Low content of organic matter	0.88				
791B:						
Rush----------------	Fair		Poor		Fair	
	Water erosion	0.68	Low strength	0.00	Hard to reclaim (rock fragments)	0.68
	Too acid	0.68	Shrink-swell	0.98		
	Carbonate content	0.80				
	Low content of organic matter	0.88				
802B:						
Orthents, loamy-----	Fair		Poor		Good	
	Low content of organic matter	0.68	Low strength	0.00		
	Water erosion	0.90	Shrink-swell	0.87		
820E:						
Hennepin------------	Fair		Fair		Poor	
	Low content of organic matter	0.12	Low strength	0.22	Slope	0.00
	Carbonate content	0.46	Slope	0.32	Rock fragments	0.88
	Water erosion	0.99				
Casco---------------	Poor		Fair		Poor	
	Too sandy	0.00	Slope	0.32	Too sandy	0.00
	Low content of organic matter	0.12			Slope	0.00
	Droughty	0.66			Rock fragments	0.00
					Hard to reclaim (rock fragments)	0.00

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
820G:						
Hennepin	Fair		Poor		Poor	
	Low content of organic matter	0.12	Slope	0.00	Slope	0.00
	Carbonate content	0.46	Low strength	0.22	Rock fragments	0.50
	Water erosion	0.99			Carbonate content	0.99
Casco	Poor		Poor		Poor	
	Too sandy	0.00	Slope	0.00	Slope	0.00
	Low content of organic matter	0.12			Too sandy	0.00
	Droughty	0.25			Rock fragments	0.00
					Hard to reclaim (rock fragments)	0.00
864:						
Pits, quarry	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
969E2:						
Casco	Poor		Fair		Poor	
	Too sandy	0.00	Slope	0.98	Too sandy	0.00
	Low content of organic matter	0.12			Slope	0.00
	Droughty	0.41			Hard to reclaim (rock fragments)	0.00
					Rock fragments	0.00
Rodman	Poor		Fair		Poor	
	Too sandy	0.00	Slope	0.98	Too sandy	0.00
	Droughty	0.00			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.46			Slope	0.00
	Low content of organic matter	0.50			Rock fragments	0.00
					Carbonate content	0.88
969F:						
Casco	Poor		Poor		Poor	
	Too sandy	0.00	Slope	0.00	Slope	0.00
	Low content of organic matter	0.12			Too sandy	0.00
	Droughty	0.15			Hard to reclaim (rock fragments)	0.00
					Rock fragments	0.00
Rodman	Poor		Poor		Poor	
	Too sandy	0.00	Slope	0.00	Slope	0.00
	Droughty	0.00			Too sandy	0.00
	Carbonate content	0.46			Rock fragments	0.00
	Low content of organic matter	0.50			Hard to reclaim (rock fragments)	0.00
					Carbonate content	0.97
3082A:						
Millington	Fair		Poor		Poor	
	Carbonate content	0.92	Wetness	0.00	Wetness	0.00
			Low strength	0.00		
			Shrink-swell	0.98		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3107A:						
Sawmill	Fair		Poor		Poor	
	Too clayey	0.98	Wetness	0.00	Wetness	0.00
	Too acid	0.99	Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
8082A:						
Millington	Fair		Poor		Poor	
	Carbonate content	0.92	Wetness	0.00	Wetness	0.00
			Shrink-swell	0.98		
8304A:						
Landes	Fair		Good		Fair	
	Low content of organic matter	0.12			Too sandy	0.78
	Too sandy	0.78				
8321A:						
Du Page	Fair		Good		Good	
	Carbonate content	0.80				

Table 18a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44A:						
Pella	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Cutbanks cave	1.00
	Depth to bedrock	0.19	Ponding	1.00	Depth to hard bedrock	0.71
			Thin layer	0.19	Slow refill	0.28
			Piping	0.01		
59A:						
Lisbon	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.19		
60B2:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.08	Depth to saturated zone	0.98	Depth to water	1.00
	Seepage	0.01	Piping	0.02		
60C2:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.98	Depth to water	1.00
	Seepage	0.01	Piping	0.02		
60C3:						
La Rose	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.98	Depth to water	1.00
	Seepage	0.72	Piping	0.01		
67A:						
Harpster	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
			Ponding	1.00	Cutbanks cave	0.10
69A:						
Milford	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.28
			Ponding	1.00	Cutbanks cave	0.10
88D:						
Sparta	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	Depth to water	1.00
	Slope	1.00				
91A:						
Swygert	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.13		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91B:						
Swygert	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.13		
91B2:						
Swygert	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.21		
91C2:						
Swygert	Somewhat limited		Very limited		Very limited	
	Slope	0.32	Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	0.18		
101A:						
Brenton	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to hard bedrock	0.96
	Depth to bedrock	0.37	Thin layer	0.37	Slow refill	0.28
			Piping	0.22	Cutbanks cave	0.10
103A:						
Houghton	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Organic matter content	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
104A:						
Virgil	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.02		
134C2:						
Camden	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	0.99	Depth to water	1.00
	Slope	0.98	Seepage	0.08		
137A:						
Clare	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to hard bedrock	0.35
	Depth to bedrock	0.09	Piping	0.29	Slow refill	0.28
			Thin layer	0.09	Depth to saturated zone	0.14
					Cutbanks cave	0.10
137B:						
Clare	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to hard bedrock	0.93
	Depth to bedrock	0.33	Thin layer	0.34	Slow refill	0.28
			Piping	0.11	Depth to saturated zone	0.14
					Cutbanks cave	0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
145A:						
Saybrook------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.28		
145B:						
Saybrook------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.30		
145B2:						
Saybrook------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.93	Depth to water	1.00
	Slope	0.08				
			Piping	0.30		
145C2:						
Saybrook------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.68	Depth to water	1.00
	Seepage	0.72				
			Piping	0.27		
146B:						
Elliott-------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.57		
148A:						
Proctor-------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.58	Depth to water	1.00
148B:						
Proctor-------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.58	Depth to water	1.00
	Slope	0.02				
148C2:						
Proctor-------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.40	Depth to water	1.00
	Slope	0.98	Seepage	0.04		
149A:						
Brenton-------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.63		
152A:						
Drummer-------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Ponding	1.00		
154A:						
Flanagan------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.01		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
171A:						
Catlin	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.75	Depth to water	1.00
			Piping	0.10		
171B:						
Catlin	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.75	Depth to water	1.00
	Slope	0.02				
			Piping	0.15		
189A:						
Martinton	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
189B:						
Martinton	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
191A:						
Knight	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.74		
192A:						
Del Rey	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
193A:						
Mayville	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.93	Depth to water	1.00
			Piping	0.14		
193B:						
Mayville	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.93	Depth to water	1.00
	Slope	0.02				
			Piping	0.39		
193C2:						
Mayville	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.82	Depth to water	1.00
	Seepage	0.72				
			Piping	0.01		
198A:						
Elburn	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.51		
			Seepage	0.05		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
199A:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.60	Depth to water	1.00
			Seepage	0.07		
199B:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.90	Depth to water	1.00
	Slope	0.02	Seepage	0.07		
199C2:						
Plano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.74	Depth to water	1.00
	Slope	0.98	Seepage	0.07		
206A:						
Thorp	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Ponding	1.00		
			Piping	0.48		
			Seepage	0.01		
210A:						
Lena	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Organic matter content	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
219A:						
Millbrook	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.76		
223B:						
Varna	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.02	Depth to saturated zone	0.68	Depth to water	1.00
223B2:						
Varna	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.02	Depth to saturated zone	0.68	Depth to water	1.00
223C2:						
Varna	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Depth to saturated zone	0.68	Depth to water	1.00
	Seepage	0.02				
223C3:						
Varna	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.32	Depth to saturated zone	0.68	Depth to water	1.00
223D3:						
Varna	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Depth to saturated zone	0.68	Depth to water	1.00
	Seepage	0.04				
			Piping	0.01		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
224C2:						
Strawn--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.99	Depth to water	1.00
	Seepage	0.72	Piping	0.04		
224C3:						
Strawn--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.99	Depth to water	1.00
	Seepage	0.72	Piping	0.01		
224D2:						
Strawn--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Depth to saturated zone	0.99	Depth to water	1.00
	Seepage	0.72	Piping	0.06		
224D3:						
Strawn--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Depth to saturated zone	0.99	Depth to water	1.00
	Seepage	0.01	Piping	0.01		
224F2:						
Strawn--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Depth to saturated zone	0.99	Depth to water	1.00
	Seepage	0.01	Piping	0.04		
228A:						
Nappanee------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
228B:						
Nappanee------------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
232A:						
Ashkum--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Ponding	1.00		
233A:						
Birkbeck------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.86	Depth to water	1.00
			Piping	0.54		
234A:						
Sunbury-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.59		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
235A:						
Bryce	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Ponding	1.00		
			Hard to pack	0.31		
242A:						
Kendall	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.53		
243C2:						
St. Charles	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Piping	0.19	Depth to water	1.00
	Seepage	0.72				
293A:						
Andres	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.75		
294B:						
Symerton	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.88	Depth to water	1.00
	Slope	0.02	Depth to saturated zone	0.53		
294C2:						
Symerton	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Piping	0.83	Depth to water	1.00
	Seepage	0.72	Depth to saturated zone	0.80		
318C2:						
Lorenzo	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	Depth to water	1.00
	Slope	0.32				
318D2:						
Lorenzo	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	Depth to water	1.00
	Slope	1.00				
324B:						
Ripon	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.70	Depth to water	1.00
	Depth to bedrock	0.69	Piping	0.04		
	Slope	0.02				
324C2:						
Ripon	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Thin layer	0.83	Depth to water	1.00
	Depth to bedrock	0.83	Piping	0.01		
	Seepage	0.72				
325A:						
Dresden	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.26	Depth to water	1.00

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
325B:						
Dresden	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.26	Depth to water	1.00
327B:						
Fox	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	Depth to water	1.00
327C2:						
Fox	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	Depth to water	1.00
	Slope	0.32				
330A:						
Peotone	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
					Cutbanks cave	0.10
			Ponding	1.00		
			Hard to pack	0.19		
356A:						
Elpaso	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.01		
369A:						
Waupecan	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	0.99	Depth to water	1.00
			Seepage	0.31		
369B:						
Waupecan	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.92	Depth to water	1.00
			Seepage	0.51		
442A:						
Mundelein	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.71		
443A:						
Barrington	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.79	Cutbanks cave	1.00
			Depth to saturated zone	0.68	Depth to saturated zone	0.14
443B:						
Barrington	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.69	Cutbanks cave	1.00
			Depth to saturated zone	0.68	Depth to saturated zone	0.14
512A:						
Danabrook	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.63		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
512B:						
Danabrook	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.02	Piping	0.60		
512C2:						
Danabrook	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Piping	0.75	Depth to water	1.00
	Seepage	0.72	Depth to saturated zone	0.68		
541A:						
Graymont	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.80	Depth to water	1.00
			Piping	0.23		
541B:						
Graymont	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.02	Piping	0.26		
541B2:						
Graymont	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.08	Piping	0.23		
541C2:						
Graymont	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.98	Depth to saturated zone	0.86	Depth to water	1.00
	Seepage	0.72	Piping	0.21		
614A:						
Chenoa	Somewhat limited		Very limited		Very limited	
	Seepage	0.04	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.04		
614B:						
Chenoa	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Depth to water	1.00
	Slope	0.02	Piping	0.13		
663A:						
Clare	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Depth to saturated zone	0.68	Cutbanks cave	1.00
			Piping	0.49	Depth to saturated zone	0.14
663B:						
Clare	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	0.68	Slow refill	0.28
	Slope	0.08	Piping	0.56	Depth to saturated zone	0.14
					Cutbanks cave	0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
667A:						
Kaneville-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Depth to saturated zone	0.68	Cutbanks cave	1.00
			Piping	0.58	Depth to saturated zone	0.14
667B:						
Kaneville-----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Depth to saturated zone	0.68	Cutbanks cave	1.00
	Slope	0.02	Piping	0.60	Depth to saturated zone	0.14
668B:						
Somonauk------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.88	Cutbanks cave	1.00
	Slope	0.02	Depth to saturated zone	0.68	Depth to saturated zone	0.14
679A:						
Blackberry----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.68	Cutbanks cave	1.00
			Depth to saturated zone	0.68	Depth to saturated zone	0.14
679B:						
Blackberry----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Piping	0.74	Slow refill	0.28
	Slope	0.02	Depth to saturated zone	0.68	Depth to saturated zone	0.14
					Cutbanks cave	0.10
680A:						
Campton-------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.72	Cutbanks cave	1.00
			Depth to saturated zone	0.68	Depth to saturated zone	0.14
680B:						
Campton-------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.85	Cutbanks cave	1.00
	Slope	0.02	Depth to saturated zone	0.68	Depth to saturated zone	0.14
791A:						
Rush----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
			Seepage	0.28		
791B:						
Rush----------------	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	0.99	Depth to water	1.00
			Seepage	0.28		
802B:						
Orthents, loamy-----	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Piping	0.68	Depth to water	1.00
	Slope	0.02				

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
820E:						
Hennepin	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.31	Depth to water	1.00
	Seepage	0.04				
Casco	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.22	Depth to water	1.00
	Slope	1.00				
820G:						
Hennepin	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.31	Depth to water	1.00
	Seepage	0.04				
Casco	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.19	Depth to water	1.00
	Slope	1.00				
864:						
Pits, quarry	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
969E2:						
Casco	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	Depth to water	1.00
	Slope	1.00				
Rodman	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.63	Depth to water	1.00
	Slope	1.00				
969F:						
Casco	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.31	Depth to water	1.00
	Slope	1.00				
Rodman	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.63	Depth to water	1.00
	Slope	1.00				
3082A:						
Millington	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.67		
3107A:						
Sawmill	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.03		

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8082A:						
Millington----------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
			Piping	0.81		
8304A:						
Landes--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.76	Depth to water	1.00
8321A:						
Du Page-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.72	Piping	0.62	Depth to saturated zone	0.99
					Slow refill	0.28
					Cutbanks cave	0.10

Table 18b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. Dashes in the drainage column indicate that drainage is generally not needed. See text for further explanation of ratings in this table)

Map symbol and soil name	Constructing grassed waterways		Constructing terraces and diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
44A:						
Pella	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Depth to hard bedrock	0.71	Ponding	1.00	Frost action	1.00
59A:						
Lisbon	Very limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.78	Restricted permeability	0.78	Restricted permeability	0.78
60B2:						
La Rose	Somewhat limited		Very limited		Somewhat limited	
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.76	Restricted permeability	0.78	Slope	0.04
60C2:						
La Rose	Somewhat limited		Very limited		Somewhat limited	
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.76	Restricted permeability	0.78	Slope	0.74
60C3:						
La Rose	Somewhat limited		Very limited		Somewhat limited	
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.76	Restricted permeability	0.78	Slope	0.74
67A:						
Harpster	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
			Ponding	1.00	Frost action	1.00
69A:						
Milford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.22	Ponding	1.00	Frost action	1.00
			Restricted permeability	0.22	Restricted permeability	0.22
88D:						
Sparta	Very limited		Very limited		---	
	Slope	1.00	Too sandy	1.00		
	Droughty	1.00	Slope	1.00		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
91A:						
Swygert	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Restricted permeability	0.91		
91B:						
Swygert	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Restricted permeability	0.91		
91B2:						
Swygert	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Restricted permeability	0.91		
91C2:						
Swygert	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Restricted permeability	0.91	Slope	0.16
101A:						
Brenton	Very limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Frost action	1.00
	Depth to hard bedrock	0.96				
103A:						
Houghton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Frost action	1.00
			Ponding	1.00	Subsidence	1.00
104A:						
Virgil	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
134C2:						
Camden	Very limited		Very limited		---	
	Water erosion	1.00	Water erosion	1.00		
			Too sandy	1.00		
137A:						
Clare	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.35	Depth to saturated zone	1.00	Frost action	1.00
	Depth to saturated zone	0.24				

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
137B:						
Clare	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.93	Depth to saturated zone	1.00	Frost action	1.00
	Depth to saturated zone	0.24				
145A:						
Saybrook	Somewhat limited		Very limited		Very limited	
	Restricted permeability	0.78	Depth to saturated zone	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Restricted permeability	0.78	Restricted permeability	0.78
145B:						
Saybrook	Somewhat limited		Very limited		Very limited	
	Restricted permeability	0.78	Depth to saturated zone	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Restricted permeability	0.78	Restricted permeability	0.78
145B2:						
Saybrook	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.62	Restricted permeability	0.78	Slope	0.04
145C2:						
Saybrook	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.24	Restricted permeability	0.78	Slope	0.74
146B:						
Elliott	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Restricted permeability	0.91		
148A:						
Proctor	Not limited		Not limited		---	
148B:						
Proctor	Not limited		Not limited		---	
148C2:						
Proctor	Very limited		Very limited		---	
	Water erosion	1.00	Water erosion	1.00		
149A:						
Brenton	Very limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Frost action	1.00

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
152A:						
Drummer	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Frost action	1.00
			Ponding	1.00		
154A:						
Flanagan	Very limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Frost action	1.00
					Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
171A:						
Catlin	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.32	Depth to saturated zone	1.00	Frost action	1.00
171B:						
Catlin	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.32	Depth to saturated zone	1.00	Frost action	1.00
					Slope	0.01
189A:						
Martinton	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
189B:						
Martinton	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
191A:						
Knight	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Frost action	1.00
	Restricted permeability	0.22	Ponding	1.00	Restricted permeability	0.22
			Restricted permeability	0.22		
192A:						
Del Rey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
					Restricted permeability	0.91
	Restricted permeability	0.91	Restricted permeability	0.91		
193A:						
Mayville	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.62	Restricted permeability	0.78		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
193B:						
Mayville------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.62	Restricted permeability	0.78	Slope	0.01
193C2:						
Mayville------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.41	Restricted permeability	0.78	Slope	0.74
198A:						
Elburn--------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Frost action	1.00
199A:						
Plano---------------	Not limited		Not limited		---	
199B:						
Plano---------------	Not limited		Not limited		---	
199C2:						
Plano---------------	Very limited		Very limited		---	
	Water erosion	1.00	Water erosion	1.00		
206A:						
Thorp---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.91	Ponding	1.00	Frost action	1.00
			Restricted permeability	0.91	Restricted permeability	0.91
210A:						
Lena----------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
			Ponding	1.00	Frost action	1.00
					Subsidence	1.00
219A:						
Millbrook-----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
223B:						
Varna---------------	Somewhat limited		Very limited		Somewhat limited	
	Restricted permeability	0.91	Depth to saturated zone	1.00	Restricted permeability	0.91
	Depth to saturated zone	0.24	Restricted permeability	0.91		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
223B2:						
Varna	Somewhat limited		Very limited		Somewhat limited	
	Restricted permeability	0.91	Depth to saturated zone	1.00	Restricted permeability	0.91
	Depth to saturated zone	0.24	Restricted permeability	0.91		
223C2:						
Varna	Somewhat limited		Very limited		Somewhat limited	
	Restricted permeability	0.91	Depth to saturated zone	1.00	Restricted permeability	0.91
	Depth to saturated zone	0.24	Restricted permeability	0.91	Slope	0.16
223C3:						
Varna	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Depth to saturated zone	1.00	Slope	0.16
	Depth to saturated zone	0.24	Restricted permeability	0.91		
223D3:						
Varna	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
	Slope	1.00	Slope	1.00	Restricted permeability	0.22
	Depth to saturated zone	0.24	Depth to saturated zone	1.00		
	Restricted permeability	0.22	Restricted permeability	0.22		
	Content of large stones	0.02	Content of large stones	0.02		
224C2:						
Strawn	Somewhat limited		Very limited		Somewhat limited	
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.78	Restricted permeability	0.78	Slope	0.74
224C3:						
Strawn	Somewhat limited		Very limited		Somewhat limited	
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.78	Restricted permeability	0.78	Slope	0.74
224D2:						
Strawn	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.78	Restricted permeability	0.78		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
224D3:						
Strawn	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.78	Restricted permeability	0.78		
224F2:						
Strawn	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.78	Depth to saturated zone	1.00	Restricted permeability	0.78
	Depth to saturated zone	0.78	Restricted permeability	0.78		
228A:						
Nappanee	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
228B:						
Nappanee	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
232A:						
Ashkum	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.22	Ponding	1.00	Frost action	1.00
			Restricted permeability	0.22	Restricted permeability	0.22
233A:						
Birkbeck	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.47	Depth to saturated zone	1.00		
234A:						
Sunbury	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
235A:						
Bryce	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.91	Ponding	1.00	Frost action	1.00
			Restricted permeability	0.91	Restricted permeability	0.91

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
242A:						
Kendall	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
243C2:						
St. Charles	Very limited		Very limited		---	
	Water erosion	1.00	Water erosion	1.00		
293A:						
Andres	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
294B:						
Symerton	Somewhat limited		Very limited		Somewhat limited	
	Restricted permeability	0.91	Depth to saturated zone	1.00	Restricted permeability	0.91
	Depth to saturated zone	0.14	Restricted permeability	0.91	Slope	0.01
294C2:						
Symerton	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.38	Depth to saturated zone	1.00	Slope	0.74
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
318C2:						
Lorenzo	Very limited		Very limited		---	
	Droughty	1.00	Too sandy	1.00		
	Content of large stones	0.30	Content of large stones	0.30		
318D2:						
Lorenzo	Very limited		Very limited		---	
	Slope	1.00	Too sandy	1.00		
	Droughty	1.00	Slope	1.00		
	Content of large stones	0.35	Content of large stones	0.35		
324B:						
Ripon	Very limited		Somewhat limited		---	
	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10		
324C2:						
Ripon	Very limited		Somewhat limited		---	
	Depth to hard bedrock	1.00	Depth to hard bedrock	0.35		
325A:						
Dresden	Not limited		Very limited		---	
			Too sandy	1.00		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
325B:						
Dresden	Not limited		Very limited		---	
			Too sandy	1.00		
327B:						
Fox	Not limited		Very limited		---	
			Too sandy	1.00		
327C2:						
Fox	Not limited		Very limited		---	
			Too sandy	1.00		
330A:						
Peotone	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.22	Ponding	1.00	Frost action	1.00
			Restricted permeability	0.22	Restricted permeability	0.22
356A:						
Elpaso	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
			Ponding	1.00	Frost action	1.00
369A:						
Waupecan	Not limited		Not limited		---	
369B:						
Waupecan	Not limited		Not limited		---	
442A:						
Mundelein	Very limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Frost action	1.00
443A:						
Barrington	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Frost action	1.00
443B:						
Barrington	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Frost action	1.00
512A:						
Danabrook	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Frost action	1.00
512B:						
Danabrook	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Frost action	1.00
					Slope	0.01

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
512C2:						
Danabrook-----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Slope	0.74
541A:						
Graymont-----------	Somewhat limited		Very limited		Very limited	
	Restricted permeability	0.91	Depth to saturated zone	1.00	Frost action	1.00
	Depth to saturated zone	0.38	Restricted permeability	0.91	Restricted permeability	0.91
541B:						
Graymont-----------	Somewhat limited		Very limited		Very limited	
	Restricted permeability	0.91	Depth to saturated zone	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Restricted permeability	0.91	Restricted permeability	0.91
					Slope	0.01
541B2:						
Graymont-----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Restricted permeability	0.91	Depth to saturated zone	1.00	Restricted permeability	0.91
	Depth to saturated zone	0.24	Restricted permeability	0.91	Slope	0.04
541C2:						
Graymont-----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Restricted permeability	0.91	Depth to saturated zone	1.00	Restricted permeability	0.91
	Depth to saturated zone	0.47	Restricted permeability	0.91	Slope	0.74
614A:						
Chenoa--------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.91
	Restricted permeability	0.91	Restricted permeability	0.91		
614B:						
Chenoa--------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22	Slope	0.01
663A:						
Clare---------------	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Frost action	1.00
663B:						
Clare---------------	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Frost action	1.00
					Slope	0.04

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
667A:						
Kaneville-----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Depth to saturated zone	1.00		
667B:						
Kaneville-----------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Slope	0.01
668B:						
Somonauk------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Slope	0.01
679A:						
Blackberry----------	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Frost action	1.00
679B:						
Blackberry----------	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Frost action	1.00
					Slope	0.01
680A:						
Campton-------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Depth to saturated zone	1.00		
680B:						
Campton-------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.24	Depth to saturated zone	1.00	Slope	0.01
791A:						
Rush----------------	Very limited		Very limited		---	
	Water erosion	1.00	Water erosion	1.00		
791B:						
Rush----------------	Very limited		Very limited		---	
	Water erosion	1.00	Water erosion	1.00		
802B:						
Orthents, Loamy-----	Very limited		Very limited		---	
	Water erosion	1.00	Water erosion	1.00		
	Restricted permeability	0.22	Restricted permeability	0.22		
820E:						
Hennepin------------	Very limited		Very limited		---	
	Slope	1.00	Slope	1.00		
	Restricted permeability	0.22	Restricted permeability	0.22		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
820E:						
Casco	Very limited		Very limited		---	
	Slope	1.00	Slope	1.00		
	Content of large stones	0.01	Too sandy	1.00		
			Content of large stones	0.01		
820G:						
Hennepin	Very limited		Very limited		---	
	Slope	1.00	Slope	1.00		
	Restricted permeability	0.22	Restricted permeability	0.22		
Casco	Very limited		Very limited		---	
	Slope	1.00	Slope	1.00		
	Droughty	1.00	Too sandy	1.00		
	Content of large stones	0.01	Content of large stones	0.01		
864:						
Pits, quarry	Not rated		Not rated		Not rated	
865:						
Pits, gravel	Not rated		Not rated		Not rated	
969E2:						
Casco	Very limited		Very limited		---	
	Slope	1.00	Slope	1.00		
	Droughty	1.00	Too sandy	1.00		
	Content of large stones	0.09	Content of large stones	0.09		
Rodman	Very limited		Very limited		---	
	Slope	1.00	Slope	1.00		
	Droughty	1.00	Too sandy	1.00		
969F:						
Casco	Very limited		Very limited		---	
	Slope	1.00	Slope	1.00		
	Droughty	1.00	Too sandy	1.00		
	Content of large stones	0.20	Content of large stones	0.20		
Rodman	Very limited		Very limited		---	
	Slope	1.00	Slope	1.00		
	Droughty	1.00	Too sandy	1.00		
3082A:						
Millington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Frost action	1.00
			Ponding	1.00	Flooding	1.00
3107A:						
Sawmill	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Frost action	1.00
			Ponding	1.00	Flooding	1.00

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Drainage: Rating class and limiting features	Value
8082A:						
Millington----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
					Frost action	1.00
			Ponding	1.00	Flooding	1.00
8304A:						
Landes--------------	Not limited		Very limited		---	
			Too sandy	1.00		
8321A:						
Du Page-------------	Not limited		Not limited		---	

Table 18c.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Irrigation: Rating class and limiting features	Irrigation: Value
44A:		
Pella	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
59A:		
Lisbon	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	0.96
60B2:		
La Rose	Somewhat limited	
	Depth to saturated zone	0.98
	Restricted permeability	0.96
	Slope	0.08
60C2:		
La Rose	Somewhat limited	
	Slope	0.98
	Depth to saturated zone	0.98
	Restricted permeability	0.96
60C3:		
La Rose	Somewhat limited	
	Slope	0.98
	Depth to saturated zone	0.98
	Restricted permeability	0.96
67A:		
Harpster	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
69A:		
Milford	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Restricted permeability	0.31
	Too acid	0.04

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation: Rating class and limiting features	Irrigation: Value
88D:		
Sparta	Very limited	
	Slope	1.00
	Too acid	0.08
	Droughty	0.01
91A:		
Swygert	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	1.00
	Too acid	0.08
91B:		
Swygert	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	1.00
	Too acid	0.08
91B2:		
Swygert	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	1.00
91C2:		
Swygert	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	1.00
	Slope	0.32
101A:		
Brenton	Very limited	
	Depth to saturated zone	1.00
	Too acid	0.01
103A:		
Houghton	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
104A:		
Virgil	Very limited	
	Depth to saturated zone	1.00
134C2:		
Camden	Somewhat limited	
	Slope	0.98
	Too acid	0.08

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation: Rating class and limiting features	Irrigation: Value
137A:		
Clare	Somewhat limited	
	Depth to saturated zone	0.68
137B:		
Clare	Somewhat limited	
	Depth to saturated zone	0.68
	Too acid	0.08
145A:		
Saybrook	Somewhat limited	
	Restricted permeability	0.96
	Depth to saturated zone	0.68
145B:		
Saybrook	Somewhat limited	
	Restricted permeability	0.96
	Depth to saturated zone	0.68
145B2:		
Saybrook	Somewhat limited	
	Restricted permeability	0.96
	Depth to saturated zone	0.93
	Too acid	0.22
	Slope	0.08
145C2:		
Saybrook	Somewhat limited	
	Slope	0.98
	Restricted permeability	0.96
	Depth to saturated zone	0.68
146B:		
Elliott	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	1.00
148A:		
Proctor	Not limited	
148B:		
Proctor	Somewhat limited	
	Slope	0.02
148C2:		
Proctor	Somewhat limited	
	Slope	0.98

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation: Rating class and limiting features	Irrigation: Value
149A:		
Brenton	Very limited	
	Depth to saturated zone	1.00
152A:		
Drummer	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
154A:		
Flanagan	Very limited	
	Depth to saturated zone	1.00
	Restricted	0.31
	Too acid	0.08
171A:		
Catlin	Somewhat limited	
	Depth to saturated zone	0.76
	Too acid	0.08
171B:		
Catlin	Somewhat limited	
	Depth to saturated zone	0.76
	Too acid	0.08
	Slope	0.02
189A:		
Martinton	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	0.31
189B:		
Martinton	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	0.31
191A:		
Knight	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Restricted permeability	0.31
192A:		
Del Rey	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	1.00

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation: Rating class and limiting features	Value
193A:		
Mayville	Somewhat limited	
	Restricted permeability	0.96
	Depth to saturated zone	0.93
	Too acid	0.08
193B:		
Mayville	Somewhat limited	
	Restricted permeability	0.96
	Depth to saturated zone	0.93
	Too acid	0.08
	Slope	0.02
193C2:		
Mayville	Somewhat limited	
	Slope	0.98
	Restricted permeability	0.96
	Depth to saturated zone	0.82
	Too acid	0.08
198A:		
Elburn	Very limited	
	Depth to saturated zone	1.00
199A:		
Plano	Not limited	
199B:		
Plano	Somewhat limited	
	Slope	0.02
199C2:		
Plano	Somewhat limited	
	Slope	0.98
206A:		
Thorp	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Restricted permeability	1.00
210A:		
Lena	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
219A:		
Millbrook	Very limited	
	Depth to saturated zone	1.00

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation	
	Rating class and limiting features	Value
223B:		
Varna	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	0.68
223B2:		
Varna	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	0.68
223C2:		
Varna	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	0.68
	Slope	0.32
223C3:		
Varna	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	0.68
	Slope	0.32
223D3:		
Varna	Very limited	
	Restricted permeability	1.00
	Slope	1.00
	Depth to saturated zone	0.68
224C2:		
Strawn	Somewhat limited	
	Depth to saturated zone	0.99
	Slope	0.98
	Restricted permeability	0.96
224C3:		
Strawn	Somewhat limited	
	Depth to saturated zone	0.99
	Slope	0.98
	Restricted permeability	0.96
224D2:		
Strawn	Very limited	
	Slope	1.00
	Depth to saturated zone	0.99
	Restricted permeability	0.96

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation: Rating class and limiting features	Irrigation: Value
224D3:		
Strawn	Very limited	
	Slope	1.00
	Depth to saturated zone	0.99
	Restricted permeability	0.96
224F2:		
Strawn	Very limited	
	Slope	1.00
	Depth to saturated zone	0.99
	Restricted permeability	0.96
228A:		
Nappanee	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	1.00
228B:		
Nappanee	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	1.00
232A:		
Ashkum	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Restricted permeability	0.31
233A:		
Birkbeck	Somewhat limited	
	Depth to saturated zone	0.86
	Too acid	0.14
234A:		
Sunbury	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	0.31
	Too acid	0.08
235A:		
Bryce	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Restricted permeability	1.00
	Too acid	0.08

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation: Rating class and limiting features	Irrigation: Value
242A:		
Kendall	Very limited	
	Depth to saturated zone	1.00
243C2:		
St. Charles	Somewhat limited	
	Slope	0.98
293A:		
Andres	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	0.31
294B:		
Symerton	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	0.53
	Too acid	0.08
	Slope	0.02
294C2:		
Symerton	Somewhat limited	
	Slope	0.98
	Depth to saturated zone	0.80
	Too acid	0.44
	Restricted permeability	0.31
318C2:		
Lorenzo	Somewhat limited	
	Droughty	0.73
	Slope	0.32
318D2:		
Lorenzo	Very limited	
	Slope	1.00
	Droughty	0.85
324B:		
Ripon	Somewhat limited	
	Depth to bedrock	0.10
	Slope	0.02
324C2:		
Ripon	Somewhat limited	
	Slope	0.98
	Depth to bedrock	0.35
325A:		
Dresden	Somewhat limited	
	Too acid	0.01
325B:		
Dresden	Somewhat limited	
	Droughty	0.01

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation: Rating class and limiting features	Irrigation: Value
327B:		
Fox	Not limited	
327C2:		
Fox	Somewhat limited	
	Slope	0.32
	Droughty	0.01
330A:		
Peotone	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Restricted permeability	0.31
356A:		
Elpaso	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Too acid	0.22
369A:		
Waupecan	Not limited	
369B:		
Waupecan	Somewhat limited	
	Too acid	0.08
442A:		
Mundelein	Very limited	
	Depth to saturated zone	1.00
443A:		
Barrington	Somewhat limited	
	Depth to saturated zone	0.68
443B:		
Barrington	Somewhat limited	
	Depth to saturated zone	0.68
512A:		
Danabrook	Somewhat limited	
	Depth to saturated zone	0.68
512B:		
Danabrook	Somewhat limited	
	Depth to saturated zone	0.68
	Slope	0.02
512C2:		
Danabrook	Somewhat limited	
	Slope	0.98
	Depth to saturated zone	0.68

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation	
	Rating class and limiting features	Value
541A:		
Graymont	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	0.80
541B:		
Graymont	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	0.68
	Slope	0.02
	Too acid	0.01
541B2:		
Graymont	Very limited	
	Restricted permeability	1.00
	Depth to saturated zone	0.68
	Slope	0.08
541C2:		
Graymont	Very limited	
	Restricted permeability	1.00
	Slope	0.98
	Depth to saturated zone	0.86
614A:		
Chenoa	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	1.00
614B:		
Chenoa	Very limited	
	Depth to saturated zone	1.00
	Restricted permeability	0.31
	Slope	0.02
663A:		
Clare	Somewhat limited	
	Depth to saturated zone	0.68
663B:		
Clare	Somewhat limited	
	Depth to saturated zone	0.68
	Slope	0.08
	Too acid	0.01

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation: Rating class and limiting features	Irrigation: Value
667A:		
Kaneville----------	Somewhat limited	
	Depth to saturated zone	0.68
667B:		
Kaneville----------	Somewhat limited	
	Depth to saturated zone	0.68
	Slope	0.02
668B:		
Somonauk-----------	Somewhat limited	
	Depth to saturated zone	0.68
	Too acid	0.08
	Slope	0.02
679A:		
Blackberry---------	Somewhat limited	
	Depth to saturated zone	0.68
679B:		
Blackberry---------	Somewhat limited	
	Depth to saturated zone	0.68
	Slope	0.02
680A:		
Campton------------	Somewhat limited	
	Depth to saturated zone	0.68
680B:		
Campton------------	Somewhat limited	
	Depth to saturated zone	0.68
	Slope	0.02
791A:		
Rush---------------	Somewhat limited	
	Too acid	0.08
791B:		
Rush---------------	Somewhat limited	
	Too acid	0.08
802B:		
Orthents, loamy-----	Somewhat limited	
	Restricted permeability	0.31
	Slope	0.02
820E:		
Hennepin-----------	Very limited	
	Slope	1.00
	Restricted permeability	0.31

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation: Rating class and limiting features	Irrigation: Value
820E:		
Casco	Very limited	
	Slope	1.00
	Droughty	0.39
820G:		
Hennepin	Very limited	
	Slope	1.00
	Restricted permeability	0.31
Casco	Very limited	
	Slope	1.00
	Droughty	0.81
864:		
Pits, quarry	Not rated	
865:		
Pits, gravel	Not rated	
969E2:		
Casco	Very limited	
	Slope	1.00
	Droughty	0.66
Rodman	Very limited	
	Slope	1.00
	Droughty	1.00
969F:		
Casco	Very limited	
	Slope	1.00
	Droughty	0.90
Rodman	Very limited	
	Slope	1.00
	Droughty	1.00
3082A:		
Millington	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Frequent flooding	0.70
3107A:		
Sawmill	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Frequent flooding	0.70
	Too acid	0.01
8082A:		
Millington	Very limited	
	Ponding	1.00
	Depth to saturated zone	1.00
	Occasional flooding	0.40

Table 18c.--Water Management--Continued

Map symbol and soil name	Irrigation	
	Rating class and limiting features	Value
8304A:		
Landes	Somewhat limited	
	Occasional flooding	0.40
8321A:		
Du Page	Somewhat limited	
	Occasional flooding	0.40

Table 19.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
44A:												
Pella-----------	0-11	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	95-100	90-100	85-100	40-50	15-25
	11-32	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-100	30-50	15-30
	32-38	Silty clay loam, silt loam, clay loam, sandy loam, loam	CL, SC	A-6, A-7-6, A-4	0-1	0-5	95-100	85-100	85-100	40-90	25-45	10-25
	38-47	Stratified loamy sand to silty clay loam	CL, SC	A-2-6, A-4, A-6, A-2-4	0-1	0-5	90-100	80-100	50-100	15-85	20-35	7-20
	47-60	Bedrock	---	---	---	---	---	---	---	---	---	---
59A:												
Lisbon----------	0-11	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	11-36	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	95-100	85-100	30-50	15-30
	36-39	Loam, clay loam, silt loam, silty clay loam	CL	A-4, A-6, A-7-6	0	0-2	95-100	85-100	75-90	50-83	20-45	8-25
	39-70	Loam, sandy loam, silt loam, silty clay loam	CL, SC	A-4, A-6	0-1	0-3	90-100	80-98	65-85	45-83	20-40	8-20
60B2:												
La Rose---------	0-8	Silt loam, silty clay loam	CL, ML	A-6, A-7-6	0	0-3	95-100	90-100	80-90	65-85	30-48	11-22
	8-19	Clay loam, silty clay loam	CL	A-7-6, A-6	0	0-3	92-100	88-100	75-90	60-82	37-46	19-25
	19-60	Loam, silt loam, silty clay loam	CL	A-6, A-7-6	0-1	0-3	88-100	85-95	72-85	55-80	29-42	13-22

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
60C2:												
La Rose---------	0-7	Silt loam, silty clay loam	CL, ML	A-6, A-7-6	0	0-3	95-100	90-100	80-90	65-85	30-48	11-22
	7-19	Clay loam, silty clay loam	CL	A-7-6, A-6	0	0-3	92-100	88-100	75-90	60-82	37-46	19-25
	19-60	Loam, silt loam, silty clay loam	CL	A-6, A-7-6	0-1	0-3	88-100	85-95	72-85	55-80	29-42	13-22
60C3:												
La Rose---------	0-8	Clay loam, silty clay loam	CL	A-7-6, A-6	0	0-3	95-100	90-98	80-90	65-82	36-47	18-24
	8-22	Clay loam, silty clay loam	CL	A-7-6, A-6	0	0-3	92-100	88-98	75-90	60-80	37-46	19-25
	22-60	Loam, silt loam, silty clay loam	CL	A-6, A-7-6	0-1	0-3	85-100	85-95	70-85	58-80	29-42	13-22
67A:												
Harpster--------	0-18	Silty clay loam	ML, MH	A-7-6, A-7-5	0	0	100	97-100	95-100	85-100	44-57	18-24
	18-41	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	38-48	19-25
	41-56	Silt loam	CL	A-6, A-4	0	0	100	97-100	85-100	75-100	26-39	9-19
	56-60	Loam, silt loam	CL	A-6, A-4	0	0	100	95-100	80-95	50-75	25-38	9-19
69A:												
Milford---------	0-9	Silty clay loam	CH, CL, MH	A-7-6, A-6	0	0	100	95-100	90-100	80-95	40-55	20-30
	9-22	Silty clay	CH, CL, MH	A-7-6	0	0	100	95-100	90-100	80-95	45-60	25-35
	22-50	Silty clay loam, clay loam, silty clay	CH, CL, MH	A-7-6, A-6	0	0	100	95-100	90-100	75-100	40-60	20-40
	50-60	Stratified sandy loam to silty clay loam	CL, SC, ML	A-6, A-7-6, A-4	0	0	95-100	95-100	90-100	45-100	25-50	10-30

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
88D:												
Sparta----------	0-8	Loamy sand	SC-SM, SM, SP-SM	A-4, A-2-4, A-1-b	0	0	85-100	85-100	50-95	10-25	0-14	NP-6
	8-17	Loamy sand	SM, SP-SM, SC-SM	A-1-b, A-2-4, A-4	0	0	85-100	85-100	50-95	10-25	0-14	NP-6
	17-33	Loamy sand, sand, fine sand	SM, SP-SM	A-2-4, A-3, A-1-b, A-4	0	0	85-100	85-100	50-95	5-28	0-14	NP-4
	33-72	Stratified sand to loamy sand	SC-SM, SM, SP, SP-SM	A-3, A-1-b, A-2-4, A-4	0	0	85-100	85-100	50-95	4-50	0-14	NP-4
91A:												
Swygert---------	0-12	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	98-100	95-100	85-98	35-45	15-21
	12-26	Silty clay, clay	CH, CL, MH	A-7-6	0	0	100	98-100	95-100	85-98	45-60	22-35
	26-51	Silty clay, clay	CL, CH, MH	A-7-6	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	51-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32
91B:												
Swygert---------	0-11	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	98-100	95-100	85-98	35-45	15-21
	11-23	Silty clay, clay	CH, CL, MH	A-7-6	0	0	100	98-100	95-100	85-98	45-60	22-35
	23-45	Silty clay, clay	CL, CH, MH	A-7-6	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	45-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32
91B2:												
Swygert---------	0-7	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	98-100	95-100	85-98	39-46	18-25
	7-30	Silty clay, clay	CH, CL, MH	A-7-6	0	0	100	98-100	95-100	85-98	45-60	22-35
	30-48	Silty clay, clay	CL, CH, MH	A-7-6	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	48-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
91C2:												
Swygert---------	0-7	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	98-100	95-100	85-98	39-46	18-25
	7-18	Silty clay, clay	CH, CL, MH	A-7-6	0	0	100	98-100	95-100	85-98	45-60	22-35
	18-36	Silty clay, clay	CL, CH, MH	A-7-6	0	0-2	97-100	90-100	85-100	75-95	45-55	20-32
	36-60	Silty clay, clay, silty clay loam	CL, CH, MH	A-7-6	0	0-3	95-100	85-100	80-100	70-95	45-60	20-32
101A:												
Brenton---------	0-13	Silt loam	CL	A-6	0	0	100	100	95-100	85-100	30-40	13-18
	13-37	Silty clay loam, silt loam	CL, ML	A-6, A-7-6, A-4	0	0	100	100	95-100	85-100	35-50	10-25
	37-42	Clay loam, silt loam, loam	CL, SC, ML, SM	A-6, A-7-6, A-4	0	0	100	95-100	90-100	50-85	30-45	10-20
	42-60	Bedrock	---	---	---	---	---	---	---	---	---	---
103A:												
Houghton--------	0-11	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
	11-60	Muck	PT	A-8	0	0	---	---	---	---	0-0	NP
104A:												
Virgil----------	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	98-100	90-100	20-35	8-20
	7-13	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	98-100	90-100	20-35	5-20
	13-49	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	98-100	90-100	30-50	15-30
	49-58	Loam, sandy loam, silty clay loam	CL, CL-ML, SC-SM	A-4, A-6, A-7-6	0	0-3	95-100	90-100	75-100	40-85	25-45	5-25
	58-60	Stratified loamy sand to clay loam	SC, CL-ML, CL, SC-SM	A-2-4, A-4, A-6, A-2-6	0	0-5	90-100	85-100	70-95	20-80	20-35	5-15
134C2:												
Camden----------	0-7	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	100	100	95-100	95-100	24-37	6-15
	7-34	Silt loam, silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	91-100	35-46	14-24
	34-43	Loam, clay loam	SC, CL	A-4, A-6	0	0-5	90-100	90-100	77-96	48-77	25-33	8-14
	43-80	Stratified loamy sand to sandy clay loam	SM, SC-SM	A-1-b, A-4, A-2-4	0	0-5	90-100	80-100	40-89	15-40	19-25	1-7

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
137A:												
Clare-----------	0-14	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	14-38	Silty clay loam, silt loam	CL	A-6, A-4, A-7-6	0	0	100	100	90-100	90-100	25-50	10-25
	38-51	Clay loam, loam	SC, CL, ML	A-4, A-6, A-7-6	0	0	90-100	80-100	75-100	50-80	29-45	5-25
	51-60	Bedrock	---	---	---	---	---	---	---	---	---	---
137B:												
Clare-----------	0-14	Silt loam	CL, ML	A-6	0	0	100	100	95-100	85-100	25-40	11-18
	14-29	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-45	15-30
	29-43	Clay loam, sandy clay loam, loam	CL	A-4, A-6	0	0	95-100	80-99	70-98	45-80	30-40	10-20
	43-60	Bedrock	---	---	---	---	---	---	---	---	---	---
145A:												
Saybrook--------	0-13	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	9-18
	13-31	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	31-36	Clay loam, silty clay loam	CL	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	36-60	Loam, silt loam, silty clay loam	SC, CL	A-6	0-1	0-3	85-100	80-95	70-90	50-75	27-33	12-22
145B:												
Saybrook--------	0-15	Silt loam	CL, ML	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	9-18
	15-32	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	37-46	17-24
	32-36	Clay loam, silty clay loam	CL	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	36-60	Loam, silt loam, silty clay loam	SC, CL	A-6	0-1	0-3	85-100	80-95	70-90	50-75	27-33	12-22

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
145B2:												
Saybrook--------	0-8	Silt loam	CL	A-6	0	0	100	97-100	95-100	85-100	29-37	13-18
	8-28	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	35-46	14-24
	28-31	Clay loam, silty clay loam	CL	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	31-60	Loam, silt loam, silty clay loam	SC, CL	A-6	0-1	0-3	85-100	80-95	70-90	50-75	27-33	12-22
145C2:												
Saybrook--------	0-9	Silt loam	CL	A-6	0	0	100	97-100	95-100	85-100	29-37	13-18
	9-30	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	85-100	35-46	14-24
	30-36	Clay loam, silty clay loam	CL	A-6	0	0	90-100	85-100	75-95	55-85	33-39	12-18
	36-60	Loam, silt loam, silty clay loam	SC, CL	A-6	0-1	0-3	85-100	80-95	70-90	50-75	27-33	12-22
146B:												
Elliott---------	0-9	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	29-37	7-15
	9-13	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	85-100	40-46	15-19
	13-17	Silty clay loam, silty clay	CH, CL	A-7-6, A-6	0	0	100	95-100	90-100	85-100	40-52	15-28
	17-35	Silty clay loam	CL	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-42	12-20
	35-60	Silty clay loam	CL	A-6, A-4	0	0-3	95-100	85-98	80-95	70-95	31-37	10-17
148A:												
Proctor---------	0-11	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	10-20
	11-27	Silty clay loam, silt loam	CL	A-6, A-4, A-7-6	0	0	100	100	95-100	85-100	25-50	10-25
	27-44	Clay loam, sandy loam, silt loam, loam	CL-ML, CL, SC-SM, SC	A-4, A-6, A-7-6, A-2-6	0	0	95-100	85-100	75-95	30-85	20-45	5-25
	44-73	Stratified loamy sand to loam	SC-SM, SC, CL-ML, CL	A-6, A-4, A-2-4	0	0	90-100	80-98	65-95	15-85	20-35	5-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
148B:												
Proctor---------	0-11	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	90-100	25-40	10-20
	11-28	Silty clay loam, silt loam	CL	A-6, A-7-6, A-4, A-5	0	0	100	100	95-100	90-100	25-50	10-25
	28-33	Loam, clay loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4, A-6, A-7-6	0	0	98-100	95-100	75-100	30-85	20-45	5-25
	33-60	Stratified loam to loamy sand	CL, CL-ML, SC, SC-SM	A-4, A-6, A-2-4, A-2-6	0	0	95-100	90-100	50-100	15-85	20-40	5-20
148C2:												
Proctor---------	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	10-20
	8-32	Silty clay loam, silt loam	CL	A-4, A-7-6, A-6	0	0	95-100	90-100	85-100	85-100	25-50	10-25
	32-48	Clay loam, sandy loam, loam	SC, CL, SC-SM, CL-ML	A-2-6, A-7-6, A-6, A-4, A-2-4	0	0	90-100	85-100	75-100	30-80	20-45	5-25
	48-60	Stratified loam to sandy loam	CL, SC, CL-ML, SC-SM	A-4, A-6, A-2-4, A-2-6	0	0	85-100	80-100	50-100	25-80	20-40	5-20
149A:												
Brenton---------	0-12	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	85-100	30-40	8-15
	12-28	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	85-100	35-50	10-25
	28-44	Clay loam, silt loam, sandy loam	CL, SC, ML	A-6, A-7-6	0	0	100	95-100	65-100	40-85	30-45	10-20
	44-60	Stratified loamy sand to clay loam	SC, CL, SC-SM, CL-ML	A-2-4, A-2-6, A-4, A-6	0	0	95-100	80-100	60-100	15-85	20-35	5-20
152A:												
Drummer---------	0-14	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	95-100	85-100	30-50	15-30
	14-41	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	95-100	85-100	30-50	15-30
	41-47	Loam, clay loam, sandy loam	CL, SC	A-6, A-7-6	0	0-5	95-100	90-100	65-95	40-85	30-50	15-30
	47-60	Stratified loamy sand to silty clay loam	SC, CL	A-2-6, A-4, A-6, A-2-4	0	0-5	95-100	80-98	60-95	15-85	20-35	7-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
154A:												
Flanagan--------	0-18	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	24-37	13-18
	18-38	Silty clay loam	CL, CH	A-7-6	0	0	100	100	95-100	95-100	45-52	22-28
	38-45	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	95-100	35-40	17-25
	45-49	Silt loam, loam	CL	A-6	0	0-3	85-100	80-100	75-90	60-90	25-33	13-19
	49-60	Loam	SC-SM, SC, CL, CL-ML	A-6, A-4	0-1	0-5	85-100	80-100	75-90	45-70	22-33	6-19
171A:												
Catlin----------	0-11	Silt loam	CL-ML, CL	A-4, A-6, A-7-6	0	0	100	100	95-100	90-100	25-45	5-20
	11-44	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	90-100	90-100	30-50	15-30
	44-49	Clay loam, loam	CL	A-6, A-4	0	0	98-100	95-100	80-95	60-80	25-40	10-20
	49-60	Loam	CL	A-4, A-6	0	0-3	90-100	85-100	70-90	55-70	20-35	5-15
171B:												
Catlin----------	0-11	Silt loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	90-100	25-40	5-20
	11-45	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	90-100	30-50	15-30
	45-57	Clay loam, loam	CL	A-6, A-4	0	0-3	90-100	85-100	70-95	50-80	25-40	10-20
	57-70	Loam	CL-ML, CL, SC-SM	A-4, A-6	0	0-3	90-100	85-100	70-90	45-70	20-35	5-15
189A:												
Martinton-------	0-12	Silt loam	CL	A-6, A-7-6, A-4	0	0	95-100	95-100	90-100	75-95	30-45	10-20
	12-39	Silty clay loam, silty clay	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	70-95	35-50	20-30
	39-60	Stratified sandy loam to silty clay	CL, SC	A-6, A-7-6, A-2-4	0	0	90-100	80-100	75-100	35-90	25-45	10-25
189B:												
Martinton-------	0-10	Silt loam	CL	A-6, A-7-6, A-4	0	0	95-100	95-100	90-100	75-95	30-45	10-20
	10-34	Silty clay loam, silty clay	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	70-95	35-50	20-30
	34-60	Stratified sandy loam to silty clay	CL, SC	A-6, A-7-6, A-2-4	0	0	90-100	80-100	75-100	35-90	25-45	10-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
191A:												
Knight----------	0-10	Silt loam	CL	A-6, A-4	0	0	100	100	97-100	95-100	30-40	8-15
	10-22	Silt loam	CL	A-6, A-4	0	0	100	100	97-100	95-100	30-40	10-15
	22-70	Silty clay loam, silt loam	CL	A-7-5, A-5, A-7-6, A-4, A-6	0	0	100	100	97-100	95-100	30-45	10-20
	70-80	Stratified gravelly sandy loam to clay loam	SC-SM, CL, CL-ML	A-1-b, A-2-4, A-4, A-6, A-2-6	0	0-5	85-100	70-95	45-95	20-85	20-35	5-15
192A:												
Del Rey---------	0-4	Silt loam	CL	A-6, A-7-6	0	0	95-100	95-100	90-100	75-98	25-45	10-25
	4-9	Silt loam	CL	A-6, A-4	0	0	95-100	95-100	90-100	75-98	20-40	8-20
	9-33	Silty clay loam, silty clay	CH, CL	A-7-6	0	0	95-100	95-100	90-100	85-98	40-55	20-30
	33-41	Silty clay loam, silty clay	CL	A-7-6, A-6	0	0	95-100	95-100	90-100	85-98	35-50	15-30
	41-60	Silt loam, silty clay loam	CL	A-6, A-7-6, A-4	0	0	95-100	95-100	90-100	75-98	30-45	10-25
193A:												
Mayville--------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-98	20-30	4-15
	8-12	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	85-98	25-35	5-15
	12-24	Silty clay loam, silt loam	CH, MH, CL	A-6, A-7-6	0	0	100	100	90-100	85-98	35-55	15-35
	24-31	Clay loam, loam, silt loam, silty clay loam	CL, SC	A-6, A-7-6	0-1	0-2	85-100	80-95	70-90	50-80	35-50	15-30
	31-60	Gravelly sandy loam, loam, gravelly loam, silt loam, silty clay loam	CL, SC	A-6, A-4, A-7-6	0-1	0-5	80-100	75-90	50-85	35-75	24-43	9-23

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
193B:												
Mayville--------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-98	20-30	4-15
	6-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	85-98	25-35	5-15
	8-28	Silty clay loam, silt loam	CH, MH, CL	A-6, A-7-6	0	0	100	100	90-100	85-98	35-55	15-35
	28-32	Clay loam, loam, silt loam, silty clay loam	CL	A-6, A-7-6	0-1	0-2	85-100	80-95	70-90	55-80	35-50	15-30
	32-60	Gravelly sandy loam, loam, gravelly loam, silt loam, silty clay loam	SC, CL, SC-SM	A-4, A-6, A-2-4, A-2-6	0-1	0-5	80-95	70-90	50-80	30-75	15-35	4-15
193C2:												
Mayville--------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-98	20-30	4-15
	6-24	Silty clay loam, silt loam	CH, CL	A-6, A-7-6	0	0	100	100	90-100	85-98	35-55	15-35
	24-34	Clay loam, loam, silt loam, silty clay loam	CL, SC	A-6, A-7-6	0-1	0-2	85-100	80-95	70-90	50-80	35-50	15-30
	34-60	Loam, gravelly sandy loam, gravelly loam, silt loam, silty clay loam	CL, SC	A-6, A-4, A-7-6	0-1	0-5	80-100	75-90	50-85	30-75	24-43	9-23
198A:												
Elburn----------	0-16	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	97-100	95-100	24-37	4-14
	16-49	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	37-46	16-24
	49-58	Stratified sandy loam to silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	55-80	20-30	5-15
	58-62	Stratified sandy loam to loamy sand	SC-SM, SM	A-2-4, A-4	0	0	95-100	90-100	60-100	20-50	19-25	1-7

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
199A:												
Plano-----------	0-14	Silt loam	CL, ML	A-7-6, A-6, A-7-5	0	0	100	100	95-100	90-100	33-45	11-18
	14-49	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	49-60	Loam, clay loam, sandy loam, sandy clay loam	SM, SC, ML, CL	A-4, A-6, A-2-6, A-2-4	0	0-1	90-100	85-95	60-90	30-75	25-37	7-17
	60-80	Stratified loamy sand to silt loam	CL-ML, SC-SM, ML, SM, SC, CL	A-1-b, A-4, A-2-4	0	0-3	90-100	80-95	35-90	15-65	20-30	2-10
199B:												
Plano-----------	0-15	Silt loam	ML, CL	A-7-5, A-6, A-7-6	0	0	100	100	95-100	90-100	33-47	11-18
	15-45	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	29-40	11-25
	45-55	Loam, clay loam, sandy loam, sandy clay loam	ML, CL, SM, SC	A-6, A-2-6, A-2-4, A-4	0	0-1	90-100	85-95	60-90	30-75	25-37	7-17
	55-80	Stratified loamy sand to silt loam	CL-ML, SC-SM, ML, CL, SM, SC	A-2-4, A-4, A-1-b	0	0-3	90-100	80-95	35-90	15-65	20-30	2-10
199C2:												
Plano-----------	0-8	Silt loam	CL, ML	A-7-6, A-7-5, A-6	0	0	100	100	95-100	90-100	31-45	11-18
	8-41	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	41-53	Loam, clay loam, sandy loam, sandy clay loam	ML, SC, SM, CL	A-2-4, A-2-6, A-6, A-4	0	0-1	90-100	85-95	60-90	30-75	25-37	7-17
	53-80	Stratified loamy sand to silt loam	ML, CL, SM, SC, CL-ML, SC-SM	A-1-b, A-4, A-2-4	0	0-3	90-100	80-95	35-90	15-65	20-30	2-10

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
206A:												
Thorp-----------	0-14	Silt loam	CL	A-4, A-6	0	0	100	95-100	90-100	85-100	20-40	8-20
	14-19	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	90-100	85-100	15-35	7-15
	19-43	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-100	35-50	15-30
	43-50	Loam, clay loam, sandy clay loam	SC, CL	A-6, A-4	0	0	90-100	85-100	70-95	40-80	20-40	10-20
	50-65	Stratified loamy sand to loam	SC-SM, SM	A-4, A-2-4, A-1-b	0	0	85-100	80-95	35-80	20-50	15-25	2-7
210A:												
Lena------------	0-10	Muck	PT	A-8	---	---	---	---	---	---	0-0	NP
	10-68	Muck	PT	A-8	---	---	---	---	---	---	0-0	NP
	68-80	Muck	PT	A-8	---	---	---	---	---	---	0-0	NP
219A:												
Millbrook-------	0-7	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	7-24	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-25
	24-53	Clay loam, loam, sandy loam	SC, CL, ML	A-6, A-7-6	0	0-3	95-100	85-100	60-95	35-85	25-50	10-25
	53-80	Stratified loamy sand to clay loam	CL, SC, SM	A-2-4, A-4, A-6	0-1	0-5	90-100	80-100	55-90	15-80	5-30	NP-15
223B:												
Varna-----------	0-12	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	95-100	90-100	80-95	25-40	8-20
	12-30	Silty clay, silty clay loam, clay	CL, CH, MH	A-6, A-7-6	0-1	0-3	95-100	90-100	85-100	80-95	35-55	20-35
	30-48	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	30-50	15-30
	48-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	30-45	13-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
223B2:												
Varna-----------	0-7	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	95-100	90-100	80-95	25-40	8-20
	7-26	Silty clay, silty clay loam, clay	CL, CH, MH	A-6, A-7-6	0-1	0-3	95-100	90-100	85-100	80-95	35-55	20-35
	26-38	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	30-50	15-30
	38-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	30-45	13-25
223C2:												
Varna-----------	0-9	Silt loam	CL, ML	A-4, A-6	0	0-1	98-100	95-100	90-100	80-95	25-40	8-20
	9-29	Silty clay, silty clay loam, clay	CL, CH, MH	A-6, A-7-6	0-1	0-3	95-100	90-100	85-100	80-95	35-55	20-35
	29-50	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	30-50	15-30
	50-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	30-45	13-25
223C3:												
Varna-----------	0-6	Silty clay loam	CL	A-6, A-7-6	0	0-1	98-100	95-100	90-100	80-95	30-45	12-25
	6-16	Silty clay, silty clay loam, clay	CL, CH, MH	A-6, A-7-6	0-1	0-3	95-100	90-100	85-100	80-95	35-55	20-35
	16-19	Silty clay, silty clay loam	CL, ML	A-6, A-7-6	0-1	0-5	95-100	85-100	80-100	75-95	30-50	15-30
	19-60	Silty clay loam, clay loam	CL, ML	A-6, A-7-6	0-1	0-5	90-100	85-100	80-100	70-95	30-45	13-25
223D3:												
Varna-----------	0-8	Silty clay loam	CL	A-6, A-7-6	0-1	0-10	95-100	90-100	85-100	75-95	30-50	12-25
	8-20	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7-6	0-1	0-10	95-100	85-100	80-100	75-95	35-56	15-29
	20-60	Silty clay loam, clay loam	CL	A-6, A-7-6	0-1	0-10	95-100	85-100	80-100	70-95	30-45	13-26

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
224C2:												
Strawn----------	0-8	Silt loam	CL, ML	A-7-6, A-6	0	0-5	95-100	90-100	85-100	65-95	29-43	12-18
	8-23	Clay loam, loam, silty clay loam, silt loam	CL	A-6, A-7-6	0-1	0-5	90-100	80-98	75-95	60-90	35-47	17-25
	23-60	Loam, silt loam, clay loam, silty clay loam	CL, SC	A-6	0-2	0-5	85-100	80-95	75-90	50-85	31-40	15-21
224C3:												
Strawn----------	0-8	Clay loam, silty clay loam	CL	A-7-6, A-6	0	0-5	90-100	90-98	85-98	65-95	37-49	18-24
	8-24	Clay loam, loam, silty clay loam, silt loam	CL	A-6, A-7-6	0-1	0-5	90-100	80-98	70-95	60-92	35-47	17-25
	24-60	Loam, silt loam, clay loam, silty clay loam	CL, SC	A-6	0-2	0-5	85-100	80-95	70-90	50-85	31-40	15-21
224D2:												
Strawn----------	0-9	Silt loam	CL, ML	A-7-6, A-6	0	0-5	95-100	90-100	85-100	65-95	29-43	12-18
	9-21	Clay loam, loam, silty clay loam, silt loam	CL	A-6, A-7-6	0-1	0-5	90-100	80-98	75-95	60-90	35-47	17-25
	21-60	Loam, silt loam, clay loam, silty clay loam	CL, SC	A-6	0-2	0-5	85-100	80-95	75-90	50-85	31-40	15-21

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
224D3:												
Strawn----------	0-8	Clay loam, silty clay loam	CL	A-6, A-7-6	0-1	0-5	90-100	90-98	85-98	65-95	39-49	19-25
	8-19	Clay loam, loam, silty clay loam, silt loam	CL	A-6, A-7-6	0-1	0-5	90-100	80-98	70-95	60-92	35-47	17-25
	19-60	Loam, silt loam, clay loam, silty clay loam	CL, SC	A-6	0-2	0-5	85-100	80-95	70-90	50-85	31-40	15-21
224F2:												
Strawn----------	0-5	Silt loam	CL, ML	A-7-6, A-6	0	0-5	95-100	90-100	85-100	65-95	29-43	12-18
	5-18	Clay loam, loam, silty clay loam, silt loam	CL	A-6, A-7-6	0-1	0-5	90-100	80-98	75-95	60-90	35-47	17-25
	18-60	Loam, silt loam, clay loam, silty clay loam	CL, SC	A-6	0-2	0-5	85-100	80-95	75-90	50-85	31-40	15-21
228A:												
Nappanee--------	0-5	Silt loam	CL	A-4, A-6	0	0-1	95-100	95-100	90-100	80-95	25-40	8-20
	5-8	Silt loam	CL, CL-ML	A-4, A-6	0	0-1	95-100	95-100	90-100	80-95	20-35	5-18
	8-26	Silty clay, clay	CL, CH	A-7-5, A-7-6, A-6	0	0-2	95-100	85-98	85-98	80-95	40-70	20-40
	26-48	Silty clay, clay	CL, CH	A-6, A-7-5, A-7-6	0	0-2	95-100	85-98	85-98	75-95	30-50	15-30
	48-75	Silty clay loam, silty clay, clay	CL, CH	A-6, A-7-5, A-7-6, A-4	0-1	0-3	95-100	85-97	80-97	70-95	30-50	10-30
228B:												
Nappanee--------	0-4	Silt loam	CL	A-4, A-6	0	0-1	95-100	95-100	90-100	80-95	25-40	8-20
	4-9	Silt loam	CL, CL-ML	A-6, A-4	0	0-1	95-100	95-100	90-100	80-95	20-35	5-18
	9-23	Silty clay, clay	CL, CH	A-7-5, A-7-6, A-6	0	0-2	95-100	85-98	85-98	80-95	40-70	20-40
	23-46	Silty clay, clay	CL, CH	A-6, A-7-6	0	0-2	95-100	85-98	85-98	75-95	30-50	15-30
	46-60	Silty clay loam, silty clay, clay	CL, CH	A-6, A-7-6, A-4, A-7-5	0-1	0-3	95-100	85-97	80-97	70-95	30-50	10-30

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
232A:												
Ashkum----------	0-12	Silty clay loam	CH, CL	A-7-6	0	0	100	100	95-100	85-100	45-52	22-28
	12-29	Silty clay loam, silty clay	CL, CH	A-7-6	0	0	100	97-100	95-100	85-100	45-57	22-32
	29-54	Silty clay loam	CL	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-45	12-22
	54-60	Silty clay loam	CL	A-6	0	0-3	95-100	85-98	80-95	70-95	33-39	12-17
233A:												
Birkbeck--------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	100	95-100	25-35	5-15
	8-11	Silt loam	CL	A-4, A-6	0	0	100	100	100	95-100	25-35	7-20
	11-46	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-45	15-25
	46-56	Loam, silty clay loam, clay loam, silt loam	CL, SC	A-4, A-6	0-1	0-5	85-100	80-100	70-90	50-85	25-35	8-15
	56-60	Loam, silt loam, clay loam, silty clay loam	CL, SC-SM, SC, CL-ML	A-4, A-6	0-1	0-5	80-100	75-98	65-90	50-80	25-35	5-15
234A:												
Sunbury---------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	24-37	4-14
	8-15	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	24-37	4-14
	15-36	Silty clay loam, silty clay	CL, CH	A-7-6	0	0	100	100	95-100	95-100	45-52	22-28
	36-43	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	35-40	14-20
	43-47	Silt loam, loam	CL	A-6, A-4	0	0	100	90-100	75-95	60-90	25-33	9-13
	47-72	Loam	CL, CL-ML, SC	A-4, A-6	0-1	0-3	90-100	85-95	70-90	50-70	22-33	4-14
235A:												
Bryce-----------	0-13	Silty clay	CH, CL, MH	A-7-6, A-7-5	0	0	100	100	95-100	85-98	45-60	20-30
	13-45	Silty clay, clay	CH, MH	A-7-6	0-1	0-2	95-100	95-100	95-100	80-95	50-60	25-35
	45-58	Silty clay, clay	MH, CH, CL	A-7-6	0-1	0-3	95-100	90-100	90-100	75-95	45-60	20-35
	58-66	Silty clay, silty clay loam, clay	CH, CL, MH	A-7-6, A-7-5	0-1	0-5	95-100	85-100	80-100	75-95	40-60	20-30

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
242A:												
Kendall---------	0-7	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	95-100	90-100	20-35	5-15
	7-11	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	90-100	20-35	5-15
	11-51	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	90-100	35-45	16-25
	51-58	Loam	CL, SC	A-6, A-4	0	0	95-100	80-98	65-98	40-80	25-35	8-15
	58-80	Stratified sandy loam to silt loam	CL-ML, CL, SC-SM, SC	A-4	0	0-3	90-100	80-98	60-95	40-80	20-30	4-10
243C2:												
St. Charles-----	0-8	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	95-100	22-35	7-15
	8-41	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-25
	41-60	Clay loam, silt loam, sandy loam, loam	SC, CL	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20
293A:												
Andres----------	0-11	Silt loam	CL-ML, ML, CL	A-4, A-6	0	0	95-100	90-100	80-95	65-90	29-33	7-13
	11-36	Clay loam, sandy clay loam, loam, silty clay loam	CL, ML	A-6	0	0-1	95-100	85-100	75-95	50-85	31-39	11-18
	36-50	Silty clay loam	ML, CL	A-6	0	0-1	95-100	85-100	80-95	70-95	33-39	12-17
	50-60	Silty clay loam, silt loam	CL, ML	A-6, A-4	0	0-3	95-100	85-100	80-95	70-95	30-39	10-17
294B:												
Symerton--------	0-15	Silt loam	ML, CL, CL-ML	A-6, A-4	0	0	95-100	90-100	80-100	65-90	29-33	7-13
	15-19	Silty clay loam	CL, ML	A-4, A-6	0	0	95-100	90-100	80-100	70-95	31-37	10-15
	19-35	Gravelly clay loam, loam, clay loam, gravelly loam	CL, ML, SC, SM	A-6, A-4	0	0-3	85-100	70-95	60-85	40-60	29-39	9-20
	35-39	Silt loam, silty clay loam	ML, CL	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	39-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
294C2:												
Symerton--------	0-8	Silt loam	CL, ML	A-6, A-4	0	0	95-100	90-100	80-100	65-90	29-33	7-13
	8-31	Gravelly clay loam, loam, clay loam, gravelly loam	CL, ML, SC, SM	A-6, A-4	0	0-3	85-100	70-95	60-90	40-60	29-39	9-20
	31-40	Silt loam, silty clay loam	CL, ML	A-4, A-6	0	0-1	95-100	90-100	85-100	75-95	28-39	7-18
	40-60	Silt loam, silty clay loam	ML, CL	A-4, A-6	0	0-1	95-100	90-100	85-100	75-95	24-37	7-18
318C2:												
Lorenzo---------	0-7	Loam	CL	A-6, A-4	0	0-5	95-100	90-100	75-90	60-75	25-40	10-20
	7-16	Loam, clay loam, gravelly sandy clay loam	CL, SC, SM	A-6, A-7-6, A-2-4	0	2-10	85-100	50-95	35-85	20-70	30-45	10-25
	16-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM, SC-SM	A-1-a, A-1-b	0	5-20	25-80	12-70	5-40	1-15	0-15	NP-5
318D2:												
Lorenzo---------	0-5	Loam	CL	A-6, A-4	0	0-5	95-100	90-100	75-90	60-75	25-40	10-20
	5-15	Loam, clay loam, gravelly sandy clay loam	CL, SC, SM	A-6, A-7-6, A-2-4	0	2-10	85-100	50-95	35-85	20-70	30-45	10-25
	15-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM, SC-SM	A-1-a, A-1-b	0	5-20	25-80	10-70	5-40	1-15	0-15	NP-5

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
324B:												
Ripon-----------	0-12	Silt loam	CL, ML	A-7-6, A-6, A-4	0	0	100	100	100	93-100	35-45	7-20
	12-29	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	93-100	40-50	15-25
	29-35	Clay loam, sandy clay loam, loam	CL, SC	A-7-6, A-6	0	0	90-100	80-98	65-95	40-80	34-46	16-25
	35-60	Bedrock	---	---	---	---	---	---	---	---	---	---
324C2:												
Ripon-----------	0-7	Silt loam	CL, ML	A-7-6, A-6, A-4	0	0	100	100	100	93-100	35-45	7-20
	7-24	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	93-100	40-50	15-25
	24-31	Clay loam, sandy clay loam, loam	CL, SC	A-7-6, A-6	0	0	90-100	80-98	65-95	40-80	34-46	16-25
	31-60	Bedrock	---	---	---	---	---	---	---	---	---	---
325A:												
Dresden---------	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	70-98	20-40	5-15
	9-29	Silty clay loam, clay loam, loam, silt loam	CL, SC	A-6, A-7-6, A-4	0	0	100	80-100	70-100	50-95	30-45	10-25
	29-33	Clay loam, gravelly clay loam, sandy clay loam, very gravelly loam	CL, SC	A-6, A-7-6, A-2-4	0-1	0-5	60-100	40-100	35-90	30-70	25-45	10-25
	33-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a, A-1-b	0-3	0-35	45-90	15-75	10-50	1-20	0-14	NP

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
325B:												
Dresden---------	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	95-100	90-100	70-98	20-40	5-15
	7-16	Silty clay loam, clay loam, loam, silt loam	CL, SC	A-6, A-7-6, A-4	0	0	100	80-100	70-100	50-95	30-45	10-25
	16-30	Clay loam, gravelly clay loam, sandy clay loam, very gravelly loam	CL, SC	A-6, A-7-6, A-2-4	0-1	0-5	60-100	40-100	35-90	30-70	25-45	10-25
	30-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a, A-1-b	0-3	0-35	55-95	15-75	10-60	1-20	0-14	NP
327B:												
Fox-------------	0-4	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	4-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	7-13	Silty clay loam, silt loam	CL, ML	A-4, A-7-6, A-6	0	0-1	95-100	85-100	75-100	70-95	25-50	10-25
	13-28	Clay loam, sandy clay loam, gravelly loam	CL, ML, SC, SM	A-2-4, A-7-6, A-2-6, A-6	0-1	0-5	65-100	50-100	35-95	30-80	25-45	10-25
	28-60	Stratified gravelly sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a, A-1-b, A-3	0-3	0-10	50-100	15-75	10-60	2-10	0-14	NP

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
327C2:												
Fox	0-4	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	4-12	Silty clay loam, silt loam	CL	A-7-6, A-4, A-6	0	0-1	95-100	85-100	75-100	70-95	25-50	10-25
	12-24	Clay loam, sandy clay loam, gravelly loam	CL, ML, SC, SM	A-7-6, A-2-4, A-6, A-2-6	0-1	0-5	65-100	50-100	35-95	30-80	25-45	10-25
	24-60	Stratified gravelly sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a, A-1-b, A-3	0-3	0-10	50-100	15-75	10-60	2-10	0-14	NP
330A:												
Peotone	0-13	Silty clay loam	CL, CH, MH	A-7-6, A-7-5	0	0	100	95-100	95-100	90-100	40-65	15-35
	13-50	Silty clay loam, silty clay	CL, CH, MH	A-7-6, A-7-5	0	0-3	98-100	95-100	90-100	85-100	40-70	15-40
	50-60	Silty clay loam, silt loam, silty clay	CL, CH, MH	A-6, A-7-6, A-7-5	0	0-5	95-100	95-100	90-100	75-100	30-60	15-30
356A:												
Elpaso	0-21	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	95-100	90-100	35-50	15-30
	21-44	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	95-100	90-100	30-50	15-30
	44-69	Clay loam, silt loam, silty clay loam, loam	CL, ML	A-6, A-7-6	0	0	100	85-100	80-100	60-100	25-45	10-25
	69-80	Clay loam, silt loam, silty clay loam, loam	CL	A-6	0	0-5	95-100	85-100	75-100	60-98	20-35	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
369A:												
Waupecan--------	0-13	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-95	20-35	8-15
	13-38	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-95	35-45	15-25
	38-55	Stratified gravelly sandy loam to clay loam	CL-ML, ML, SC, SC-SM, SM	A-2-4, A-4	0	0-3	90-100	50-98	50-80	25-65	0-20	NP-10
	55-70	Stratified gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM, SM	A-1-a, A-1-b	0-5	5-50	40-95	15-75	10-50	1-15	0-14	NP
369B:												
Waupecan--------	0-11	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-95	20-35	8-15
	11-39	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-95	35-45	15-25
	39-45	Stratified gravelly sandy loam to clay loam	CL-ML, ML, SM, SC, SC-SM	A-2-4, A-4	0	3-10	90-100	50-95	50-80	25-65	0-20	NP-10
	45-60	Stratified gravelly loamy sand to extremely gravelly coarse sand	GM, GP-GM, SP, SP-SM, SM	A-1-a, A-1-b	0-5	5-50	40-95	15-72	10-50	1-15	0-14	NP
442A:												
Mundelein-------	0-17	Silt loam	CL, CL-ML, ML	A-4, A-6, A-7-6	0	0	100	100	95-100	85-100	25-45	5-20
	17-31	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	98-100	95-100	80-100	35-50	15-25
	31-42	Sandy loam, silt loam, clay loam, loam	CL, SC	A-4, A-6, A-7-6	0	0	95-100	85-100	60-95	40-90	20-45	8-20
	42-60	Stratified sandy loam to silt loam	CL, ML, SC-SM, SC, SM	A-2-4, A-2-6, A-4, A-6	0	0	90-100	80-100	50-90	20-85	5-35	NP-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
443A:												
Barrington------	0-13	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	98-100	90-100	85-100	25-40	5-20
	13-28	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	98-100	90-100	85-100	35-50	11-25
	28-44	Sandy loam, silt loam, clay loam	CL, SC, SM	A-4, A-6, A-7-6	0	0	95-100	90-100	70-95	35-90	20-45	8-20
	44-66	Stratified fine sand to silt loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4, A-6	0	0	95-100	80-100	60-90	15-85	10-30	5-15
443B:												
Barrington------	0-11	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-100	25-40	5-20
	11-32	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	90-100	85-100	35-50	11-25
	32-42	Sandy loam, silt loam, clay loam	CL, SC, SM	A-4, A-6, A-7-6	0	0	100	90-100	70-95	35-90	20-45	8-20
	42-60	Stratified fine sand to silt loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4, A-6	0	0	95-100	90-100	60-90	20-85	10-30	5-15
512A:												
Danabrook-------	0-19	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	25-40	5-20
	19-34	Silty clay loam, silt loam	CL	A-6, A-7-6, A-4	0	0	100	98-100	90-100	85-100	30-45	10-25
	34-53	Clay loam, loam, sandy clay loam	CL	A-6, A-7-6, A-4	0	0-2	95-100	80-98	75-95	50-75	25-45	10-20
	53-60	Loam, sandy loam	CL, SC, CL-ML, SC-SM	A-4, A-6	0	0-3	90-100	80-98	55-90	35-70	20-40	5-15
512B:												
Danabrook-------	0-13	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	25-40	5-20
	13-33	Silty clay loam, silt loam	CL	A-6, A-7-6, A-4	0	0	100	98-100	90-100	85-100	30-45	10-25
	33-50	Clay loam, loam, sandy clay loam	CL	A-6, A-7-6, A-4	0	0-2	95-100	80-98	75-95	50-75	25-45	10-20
	50-60	Loam, sandy loam	CL-ML, SC-SM, SC, CL	A-4, A-6	0	0-3	90-100	78-98	55-90	35-70	20-40	5-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
512C2:												
Danabrook-------	0-8	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	25-40	5-20
	8-27	Silty clay loam, silt loam	CL	A-6, A-7-6, A-4	0	0	100	98-100	90-100	85-100	30-45	10-25
	27-40	Clay loam, loam, sandy clay loam	CL	A-6, A-7-6, A-4	0	0-2	95-100	80-98	75-95	50-75	25-45	10-20
	40-65	Loam, sandy loam	CL, SC, SC-SM, CL-ML	A-4, A-6	0	0-3	90-100	80-98	55-90	35-70	20-40	5-15
541A:												
Graymont--------	0-12	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	12-21	Silty clay loam, silt loam	CL, ML	A-4, A-7-6, A-6	0	0	100	100	95-100	90-100	30-50	10-25
	21-33	Silty clay loam, silt loam	MH, CL, CH, ML	A-6, A-7-6, A-4	0	0-5	95-100	85-99	80-95	80-90	30-55	10-30
	33-60	Silty clay loam, silt loam	ML, CL	A-6, A-7-6, A-4	0	0-5	90-100	80-98	80-95	70-90	25-50	8-25
541B:												
Graymont--------	0-12	Silt loam	ML, CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	12-33	Silty clay loam, silt loam	ML, CL	A-6, A-7-6, A-4	0	0	100	100	95-100	90-100	30-50	10-25
	33-38	Silty clay loam, silt loam	CL, CH, ML, MH	A-6, A-7-6, A-4	0	0-3	95-100	85-99	80-95	80-90	30-55	10-30
	38-60	Silty clay loam, silt loam	CL, ML	A-4, A-6, A-7-6	0	0-5	90-100	80-98	80-95	70-90	25-50	8-25
541B2:												
Graymont--------	0-8	Silt loam	CL, ML, CL-ML	A-7-5, A-6, A-4	0	0	100	100	95-100	90-100	28-47	6-17
	8-24	Silty clay loam, silt loam	MH, ML, CL	A-7-5, A-6, A-7-6, A-4	0	0	100	100	95-100	90-100	33-58	8-27
	24-35	Silty clay loam, silt loam	MH, ML, CL	A-7-6, A-6, A-4	0	0-5	90-100	85-99	80-95	80-90	30-55	9-27
	35-60	Silty clay loam, silt loam	ML, CL	A-4, A-6, A-7-6	0	0-5	90-100	80-98	80-95	70-90	25-50	9-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
541C2:												
Graymont--------	0-9	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-20
	9-30	Silty clay loam, silt loam	CL, ML	A-6, A-7-6, A-4	0	0	100	100	95-100	90-100	30-50	10-25
	30-38	Silty clay loam, silt loam	CH, MH, CL, ML	A-6, A-7-6, A-4	0	0-5	90-100	85-99	80-95	80-90	30-55	10-30
	38-60	Silty clay loam, silt loam	CL, ML	A-4, A-6, A-7-6	0	0-5	90-100	80-98	80-95	70-90	25-50	8-25
614A:												
Chenoa----------	0-12	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	93-100	40-46	15-19
	12-32	Silty clay loam, silty clay	CL, MH, CH	A-7-6	0	0	100	100	97-100	93-100	45-52	22-28
	32-36	Silty clay loam, silt loam	CL, ML	A-7-6, A-6	0	0-1	95-100	85-98	80-95	70-95	33-43	12-20
	36-60	Silty clay loam, silt loam	CL, ML	A-6	0	0-3	95-100	85-98	80-95	70-95	33-39	12-17
614B:												
Chenoa----------	0-15	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	93-100	40-46	15-19
	15-28	Silty clay loam, silty clay	CL, MH, CH	A-7-6	0	0	100	100	97-100	93-100	45-52	22-28
	28-47	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0-1	95-100	85-98	80-95	70-95	33-43	12-20
	47-60	Silty clay loam, silt loam	ML, CL	A-6	0	0-3	95-100	85-98	80-95	70-95	33-39	12-17

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
663A:												
Clare-----------	0-11	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	90-100	25-40	10-20
	11-32	Silty clay loam, silt loam	CL	A-6, A-7-6, A-4	0	0	100	100	90-100	90-100	25-50	10-25
	32-61	Clay loam, sandy loam, loam	CL-ML, CL, SC-SM, SC	A-4, A-7-6, A-6	0	0	90-100	80-100	75-100	40-85	20-45	5-25
	61-80	Stratified loamy sand to gravelly loam	SC-SM, SC, CL-ML, CL	A-1-b, A-2-6, A-4, A-2-4, A-6	0	0-5	82-100	70-98	50-95	20-75	20-40	5-20
663B:												
Clare-----------	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	25-40	5-15
	14-36	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-45	15-30
	36-44	Clay loam, silty clay loam, loam, silt loam	CL	A-4, A-6	0	0	95-100	85-99	70-98	50-90	30-40	10-20
	44-60	Stratified sandy loam to loam	SC, CL, SC-SM, CL-ML	A-2-4, A-4, A-6, A-2-6	0	0	90-100	70-99	60-98	35-65	20-30	4-15
667A:												
Kaneville-------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	8-42	Silty clay loam, silt loam	CL	A-6, A-4, A-7-6	0	0	100	100	95-100	90-100	25-45	10-30
	42-56	Loam, clay loam, silt loam, sandy loam	CL-ML, CL, SC-SM, SC	A-2-6, A-4, A-6, A-2-4	0	0-3	95-100	85-100	60-95	30-85	20-35	5-20
	56-80	Stratified clay loam to loamy sand	SC-SM, SC, CL-ML, CL	A-2-6, A-4, A-6, A-2-4	0	0-5	95-100	80-98	55-90	20-80	10-25	4-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
667B:												
Kaneville-------	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	25-35	5-15
	9-44	Silty clay loam, silt loam	CL	A-6, A-7-6, A-4	0	0	100	100	95-100	90-100	25-45	10-30
	44-52	Clay loam, silt loam, sandy loam, loam	CL-ML, CL, SC-SM, SC	A-2-6, A-4, A-6, A-2-4	0	0-1	98-100	85-100	65-100	35-85	20-35	5-20
	52-80	Stratified clay loam to loamy sand	SC-SM, SC, CL-ML, CL	A-2-6, A-4, A-6, A-2-4	0	0-1	95-100	80-100	60-90	20-80	10-25	4-15
668B:												
Somonauk--------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	5-15
	9-26	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	15-25
	26-55	Clay loam, loam, sandy loam	CL, SC, SC-SM, CL-ML	A-2-4, A-4, A-6	0	0-3	90-100	85-100	60-95	30-85	20-40	5-15
	55-60	Stratified silt loam to gravelly sand	SC-SM, SC, CL, SM, ML	A-2-4, A-4, A-1-b	0	0-5	85-100	70-98	50-90	15-70	0-25	NP-10
679A:												
Blackberry------	0-11	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	90-100	20-30	5-15
	11-52	Silty clay loam, silt loam	CL	A-6, A-7-6, A-4	0	0	100	100	95-100	90-100	25-45	10-25
	52-68	Silt loam, gravelly clay loam, sandy loam, loam	CL-ML, CL, SC-SM, SC	A-2-4, A-4, A-6, A-2-6	0	0-5	90-100	70-100	55-90	30-85	20-40	5-20
	68-80	Stratified loamy sand to gravelly clay loam	SC-SM, SC, CL-ML, CL	A-4, A-1-b, A-2-4	0	0-5	85-100	62-100	45-90	15-85	15-25	5-10

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
679B:												
Blackberry------	0-16	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	27-37	8-15
	16-47	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-45	15-25
	47-62	Stratified loam to silt loam	CL, CL-ML, ML	A-4	0	0	90-100	85-100	70-99	50-75	25-35	5-10
	62-70	Stratified silt loam to loam to sandy loam	CL-ML, CL, ML, SC-SM, SM, SC	A-4	0	0	95-100	80-100	60-99	40-75	15-30	NP-10
680A:												
Campton---------	0-6	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	90-100	20-35	7-15
	6-50	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	50-61	Loam, silt loam, clay loam, sandy loam	CL, SC	A-6, A-4, A-2-4, A-2-6	0	0	90-100	80-100	60-90	35-80	20-35	8-20
	61-73	Stratified loamy sand to gravelly loam	SC-SM, SC, CL-ML, CL	A-4, A-6, A-2-6	0	0-5	90-100	70-100	50-90	20-75	15-35	5-15
680B:												
Campton---------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	20-35	7-15
	8-45	Silty clay loam, silt loam	CL	A-6, A-4	0	0	100	100	95-100	90-100	30-40	10-20
	45-51	Loam, clay loam, sandy loam	CL, SC	A-6, A-4, A-2-4, A-2-6	0	0	90-100	80-100	60-90	35-80	20-35	8-20
	51-80	Stratified loamy sand to gravelly loam	SC-SM, SC, CL-ML, CL	A-4, A-6, A-2-4, A-2-6	0	0-3	90-100	70-100	50-90	20-75	15-35	5-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
791A:												
Rush------------	0-4	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-30	5-15
	4-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-30	5-15
	11-38	Silty clay loam, silt loam	CL	A-6	0	0	100	100	90-100	85-100	30-40	10-20
	38-45	Clay loam, sandy clay loam, gravelly loam	CL, SC	A-6, A-4, A-2-4, A-2-6	0	1-5	80-100	70-100	50-90	25-75	30-40	10-20
	45-60	Stratified extremely gravelly coarse sand to gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1-a, A-1-b	0-1	1-5	30-85	15-75	10-40	2-15	0-14	NP
791B:												
Rush------------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-30	5-15
	7-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-30	5-15
	11-35	Silty clay loam, silt loam	CL	A-6	0	0	100	100	90-100	85-100	30-40	10-20
	35-46	Clay loam, loam, gravelly sandy clay loam	CL, SC	A-6, A-4, A-2-6, A-2-4	0	1-5	80-100	70-100	50-90	25-75	30-40	10-20
	46-60	Stratified extremely gravelly coarse sand to gravelly loamy sand	GP, GP-GM, SP, SP-SM	A-1-a, A-1-b	0-1	1-5	30-85	15-75	10-40	2-15	0-14	NP
802B:												
Orthents, loamy	0-6	Loam	CL, ML	A-4, A-6	0-1	0-5	95-100	85-100	80-95	50-80	20-40	8-20
	6-60	Loam, silt loam, clay loam	CL, ML	A-4, A-6	0-1	0-5	95-100	80-100	75-95	50-80	20-40	8-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
820E:												
Hennepin--------	0-5	Loam	CL, ML, SC	A-6, A-7-6	0-1	0-3	90-100	85-100	70-90	50-85	31-45	13-21
	5-18	Loam, clay loam, silt loam	SC, CL	A-6	0-1	0-5	85-100	80-100	70-90	50-85	27-40	12-21
	18-60	Loam, clay loam, silt loam	SC, CL	A-6	0-1	0-5	85-100	80-100	70-90	50-85	27-40	12-21
Casco-----------	0-6	Silt loam	ML, SM, CL, CL-ML, SC-SM	A-4	0	0	95-100	90-100	80-95	70-90	20-30	3-10
	6-20	Gravelly clay loam, loam, gravelly sandy clay loam	SC, SM, GC, CL	A-7-6, A-6, A-2-7, A-2-6	0-1	0-9	60-100	50-100	40-90	35-75	25-46	11-26
	20-60	Stratified gravel to sand	GP, GP-GM, SP-SM, SP, SM	A-1-a, A-2-4, A-1-b	0-3	0-10	40-100	10-100	10-60	2-15	0-14	NP
820G:												
Hennepin--------	0-5	Loam	CL, SC, ML	A-7-6, A-6	0-1	0-3	90-100	85-100	70-90	50-85	31-45	13-21
	5-16	Loam, clay loam, silt loam	SC, CL	A-6	0-1	0-5	85-100	80-100	70-90	50-85	27-40	12-21
	16-60	Loam, clay loam, silt loam	CL, SC	A-6	0-1	0-5	85-100	80-100	70-90	50-85	27-40	12-21
Casco-----------	0-7	Silt loam	SM, CL, ML, CL-ML, SC-SM	A-4	0	0	95-100	90-100	80-100	70-90	20-30	3-10
	7-15	Gravelly loam, loam, clay loam	GC, CL, SM, SC	A-2-6, A-6, A-7-6, A-2-7	0-1	0-9	50-100	50-100	40-90	40-75	25-46	11-26
	15-60	Stratified gravel to sand	SM, GP, GP-GM, SP, SP-SM	A-1-a, A-1-b, A-2-4, A-3	0-3	0-10	30-100	15-100	10-60	1-15	0-14	NP
864. Pits, quarry												
865. Pits, gravel												

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
969E2:												
Casco-----------	0-5	Loam	CL, ML, SC, CL-ML, SC-SM	A-4	0	0-5	90-100	85-100	70-95	50-80	20-30	3-10
	5-19	Clay loam, sandy clay loam, gravelly loam	CL, ML, GC, SC	A-2-6, A-6, A-7-6	0-1	0-5	65-100	50-100	40-90	30-80	25-46	11-26
	19-60	Stratified sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a, A-1-b, A-3	0-3	0-30	25-100	15-85	10-60	2-10	0-14	NP
Rodman----------	0-6	Gravelly loam	CL-ML, ML, SC-SM, SC	A-2-4, A-4	0	0-2	75-95	65-80	60-75	35-65	0-30	3-9
	6-10	Gravelly loam, sandy loam, loam	CL-ML, SM, ML, SC, SC-SM	A-1-b, A-2-4, A-4	0	0-2	70-95	50-80	40-75	20-55	0-30	NP-10
	10-60	Stratified very gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-1	1-5	30-70	15-50	7-20	2-15	0-14	NP
969F:												
Casco-----------	0-4	Loam	CL, ML, SC, CL-ML, SC-SM	A-4	0	0-5	90-100	85-100	70-95	50-80	20-30	3-10
	4-15	Clay loam, sandy clay loam, gravelly loam	CL, ML, GC, SC	A-2-6, A-6, A-7-6	0-1	0-5	65-100	50-100	40-90	30-80	25-46	11-26
	15-60	Stratified sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a, A-1-b, A-3	0-3	0-30	25-100	15-85	10-60	2-10	0-14	NP
Rodman----------	0-11	Gravelly loam	CL-ML, ML, SC-SM, SC	A-4, A-2-4	0	0-2	75-95	65-80	60-75	35-65	0-30	3-9
	11-14	Gravelly loam, sandy loam, loam	CL-ML, SM, ML, SC, SC-SM	A-1-b, A-2-4, A-4	0	0-2	70-95	50-80	40-75	20-55	0-30	NP-10
	14-60	Stratified very gravelly loamy sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-a	0-1	1-5	30-70	15-50	7-20	2-15	0-14	NP

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
3082A:												
Millington------	0-26	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	95-100	90-100	80-100	70-95	25-35	5-20
	26-53	Loam, silt loam, clay loam	CL, ML	A-6, A-7-6, A-4	0	0	95-100	80-100	75-100	65-90	28-50	10-22
	53-60	Stratified sandy loam to silty clay loam	CL, SC-SM, CL-ML, SC	A-4, A-7-6, A-6	0	0	90-100	80-100	60-95	35-85	20-45	5-20
3107A:												
Sawmill---------	0-29	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	29-48	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	48-60	Silty clay loam, clay loam, silt loam	CL, ML	A-7-6, A-6	0	0	100	90-100	85-100	80-95	37-46	16-22
8082A:												
Millington------	0-26	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	95-100	90-100	80-100	70-95	25-35	5-20
	26-36	Loam, silt loam, clay loam	CL, ML	A-6, A-7-6, A-4	0	0	95-100	80-100	75-100	65-90	28-50	10-22
	36-62	Stratified sandy loam to silty clay loam	SC-SM, CL-ML, CL, SC	A-4, A-7-6, A-6	0	0	90-100	80-100	60-95	35-85	20-45	5-20
8304A:												
Landes----------	0-16	Fine sandy loam	SC-SM, SC, SM	A-4, A-2-4	0	0	100	85-100	85-95	30-50	15-29	NP-10
	16-34	Loam, very fine sandy loam, loamy fine sand, fine sandy loam	SC-SM, SC, SM	A-4, A-2-4	0	0	100	85-100	70-95	15-50	0-28	NP-9
	34-62	Sandy loam, loamy fine sand, sand	SC-SM, SM, SP-SM	A-3, A-2-4, A-4	0	0	100	85-100	60-85	5-50	0-25	NP-7

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
8321A:												
Du Page---------	0-30	Silt loam	CL, ML	A-6, A-7-6	0	0	95-100	90-100	85-100	70-95	30-45	11-21
	30-35	Sandy loam, loam, gravelly sandy clay loam, silt loam	CL, ML, SC	A-4, A-6, A-7-6	0	0	90-100	70-100	65-100	45-90	25-45	7-20
	35-60	Stratified silt loam to gravelly sandy clay loam	CL, CL-ML, ML, SC, SC-SM	A-4, A-6	0	0	85-100	65-100	60-95	40-90	15-40	5-20

Table 20.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
44A:														
Pella---------------	0-11	0-15	50-73	27-35	1.10-1.30	0.6-2	0.21-0.23	3.0-5.9	4.0-6.0	.24	.24	3	6	48
	11-32	0-15	50-73	27-35	1.20-1.45	0.6-2	0.21-0.24	3.0-5.9	0.5-2.0	.37	.37			
	32-38	10-55	25-70	15-32	1.35-1.60	0.6-2	0.15-0.20	3.0-5.9	0.2-0.5	.32	.32			
	38-47	15-85	5-75	5-30	1.40-1.70	0.2-2	0.10-0.22	0.0-2.9	0.0-0.2	.32	.32			
	47-60	---	---	---	---	0.01-0.6	---	---	---	---	---			
59A:														
Lisbon--------------	0-11	0-15	58-80	20-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	11-36	0-15	50-75	25-35	1.15-1.35	0.6-2	0.18-0.22	3.0-5.9	0.5-2.0	.37	.37			
	36-39	15-45	24-65	20-34	1.45-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-0.5	.32	.32			
	39-70	15-55	24-65	15-32	1.65-1.85	0.06-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
60B2:														
La Rose-------------	0-8	15-33	50-67	18-32	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	1.5-3.5	.28	.28	4	6	48
	8-19	15-40	30-58	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	19-60	15-40	33-65	20-32	1.65-1.85	0.06-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.43	.43			
60C2:														
La Rose-------------	0-7	15-33	50-67	18-32	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	1.5-3.5	.28	.28	4	6	48
	7-19	15-40	30-58	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	19-60	15-40	33-65	20-32	1.65-1.85	0.06-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.43	.43			
60C3:														
La Rose-------------	0-8	15-40	30-58	27-35	1.40-1.60	0.6-2	0.17-0.19	3.0-5.9	0.5-2.0	.32	.32	3	6	48
	8-22	15-40	30-58	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.37	.37			
	22-60	15-40	33-65	20-32	1.65-1.85	0.06-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.43	.43			
67A:														
Harpster------------	0-18	3-15	50-70	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-6.0	.24	.24	5	4L	86
	18-41	3-15	50-70	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.8-1.5	.37	.37			
	41-56	3-27	58-82	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.5-1.0	.49	.49			
	56-60	30-50	28-55	15-27	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	0.1-0.5	.37	.37			
69A:														
Milford-------------	0-9	5-20	40-60	35-40	1.30-1.50	0.6-2	0.20-0.23	6.0-8.9	4.0-6.0	.20	.20	5	4	86
	9-22	5-20	40-55	40-42	1.30-1.50	0.2-0.6	0.14-0.20	6.0-8.9	3.0-5.0	.17	.17			
	22-50	0-25	33-65	35-42	1.40-1.60	0.2-0.6	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	50-60	0-55	15-82	18-30	1.50-1.70	0.2-0.6	0.20-0.22	3.0-5.9	0.0-1.0	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
88D:														
Sparta--------------	0-8	75-95	0-22	0-10	1.20-1.40	2-6	0.09-0.12	0.0-2.9	1.0-2.0	.02	.02	5	2	134
	8-17	75-95	0-22	0-10	1.20-1.40	2-6	0.09-0.12	0.0-2.9	0.5-1.0	.02	.02			
	17-33	72-95	0-27	1-8	1.40-1.60	6-20	0.05-0.11	0.0-2.9	0.1-1.0	.10	.10			
	33-72	52-100	0-29	3-16	1.40-1.60	6-20	0.06-0.08	0.0-2.9	0.1-1.0	.17	.17			
91A:														
Swygert-------------	0-12	2-15	50-71	27-35	1.30-1.50	0.2-0.6	0.19-0.22	3.0-5.9	3.0-5.0	.20	.20	4	6	48
	12-26	1-15	30-59	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	26-51	1-20	30-59	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	51-60	1-20	25-59	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
91B:														
Swygert-------------	0-11	2-15	50-71	27-35	1.30-1.50	0.2-0.6	0.19-0.22	3.0-5.9	3.0-5.0	.20	.20	4	6	48
	11-23	1-15	30-59	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	23-45	1-20	30-59	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	45-60	1-20	25-59	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
91B2:														
Swygert-------------	0-7	2-15	47-68	30-38	1.35-1.55	0.2-0.6	0.18-0.21	3.0-5.9	2.0-4.0	.24	.24	4	6	48
	7-30	1-15	30-59	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	30-48	1-20	30-59	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	48-60	1-20	25-59	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
91C2:														
Swygert-------------	0-7	2-15	47-68	30-38	1.35-1.55	0.2-0.6	0.18-0.21	3.0-5.9	2.0-4.0	.24	.24	4	6	48
	7-18	1-15	30-59	40-55	1.40-1.60	0.06-0.2	0.10-0.13	6.0-8.9	0.5-1.5	.32	.32			
	18-36	1-20	30-59	40-50	1.45-1.65	0.06-0.2	0.10-0.13	6.0-8.9	0.1-1.0	.32	.32			
	36-60	1-20	25-59	38-55	1.65-1.85	0.02-0.06	0.05-0.09	3.0-5.9	0.0-0.5	.37	.37			
101A:														
Brenton-------------	0-13	0-15	58-80	20-27	1.25-1.45	0.6-2	0.22-0.26	0.0-2.9	3.0-5.0	.28	.28	3	6	48
	13-37	0-15	50-75	25-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	37-42	15-51	25-67	18-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	42-60	---	---	---	---	0.01-0.6	---	---	---	---	---			
103A:														
Houghton------------	0-11	---	---	---	0.20-0.35	0.2-6	0.35-0.45	---	70-99	---	---	3	2	134
	11-60	---	---	---	0.15-0.25	0.2-6	0.35-0.45	---	70-99	---	---			
104A:														
Virgil--------------	0-7	0-10	63-85	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	7-13	0-10	63-85	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.43	.43			
	13-49	0-10	55-73	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	49-58	15-60	10-70	15-30	1.40-1.70	0.6-2	0.11-0.19	3.0-5.9	0.2-0.5	.32	.32			
	58-60	20-80	0-75	5-30	1.45-1.75	0.6-6	0.05-0.11	0.0-2.9	0.0-0.5	.28	.28			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
134C2:														
Camden--------------	0-7	2-7	66-83	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	7-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	34-43	30-50	28-48	22-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.0-0.5	.32	.32			
	43-80	65-80	5-25	5-25	1.45-1.65	2-6	0.06-0.10	0.0-2.9	0.0-0.3	.28	.28			
137A:														
Clare---------------	0-14	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	3	6	48
	14-38	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	38-51	22-45	23-50	18-32	1.30-1.55	0.6-2	0.13-0.19	3.0-5.9	0.2-1.0	.32	.32			
	51-60	---	---	---	---	0.01-0.6	---	---	---	---	---			
137B:														
Clare---------------	0-14	2-15	58-80	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	3	6	48
	14-29	1-10	55-74	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	29-43	20-55	13-50	20-32	1.30-1.55	0.6-2	0.13-0.19	3.0-5.9	0.2-1.0	.32	.32			
	43-60	---	---	---	---	0.01-0.6	---	---	---	---	---			
145A:														
Saybrook------------	0-13	2-15	58-83	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	2.5-4.0	.28	.28	5	6	48
	13-31	2-15	50-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	31-36	15-40	25-58	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	36-60	15-45	28-67	18-32	1.65-1.85	0.06-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.43	.43			
145B:														
Saybrook------------	0-15	2-15	58-83	15-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	2.5-4.0	.28	.28	5	6	48
	15-32	2-15	50-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	32-36	15-40	25-58	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	36-60	15-45	28-67	18-32	1.65-1.85	0.06-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.43	.43			
145B2:														
Saybrook------------	0-8	2-15	58-78	20-27	1.30-1.50	0.6-2	0.18-0.22	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	8-28	2-15	50-73	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	28-31	15-40	25-58	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	31-60	15-45	28-67	18-32	1.65-1.85	0.06-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.43	.43			
145C2:														
Saybrook------------	0-9	2-15	58-78	20-27	1.30-1.50	0.6-2	0.18-0.22	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-30	2-15	50-73	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	30-36	15-40	25-58	27-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.1-0.5	.32	.32			
	36-60	15-45	28-67	18-32	1.65-1.85	0.06-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.43	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
146B:														
Elliott-------------	0-9	2-15	58-78	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.24	.24	4	6	48
	9-13	2-15	50-71	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	2.5-4.0	.20	.20			
	13-17	1-20	35-61	38-45	1.40-1.60	0.06-0.6	0.11-0.14	6.0-8.9	0.5-1.5	.32	.32			
	17-35	5-20	40-65	27-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	35-60	5-20	45-65	27-35	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
148A:														
Proctor-------------	0-11	0-15	58-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	11-27	0-15	50-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	27-44	15-70	5-67	18-35	1.30-1.55	0.6-2	0.13-0.19	3.0-5.9	0.2-1.0	.32	.32			
	44-73	15-85	0-80	5-25	1.40-1.70	0.6-6	0.07-0.17	0.0-2.9	0.0-0.5	.28	.28			
148B:														
Proctor-------------	0-11	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	11-28	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	28-33	15-70	0-67	18-32	1.30-1.55	0.6-2	0.13-0.16	3.0-5.9	0.2-1.0	.32	.32			
	33-60	15-85	0-80	5-20	1.40-1.70	0.6-6	0.07-0.19	0.0-2.9	0.2-0.5	.28	.28			
148C2:														
Proctor-------------	0-8	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-3.5	.37	.37	5	6	48
	8-32	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	32-48	20-70	0-64	16-35	1.30-1.55	0.6-6	0.13-0.16	3.0-5.9	0.2-1.0	.32	.32			
	48-60	15-85	0-75	10-20	1.40-1.70	0.6-6	0.07-0.19	0.0-2.9	0.2-0.5	.28	.28			
149A:														
Brenton-------------	0-12	0-15	58-80	20-27	1.25-1.45	0.6-2	0.22-0.26	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	12-28	0-15	50-75	25-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	28-44	15-60	10-67	18-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	44-60	15-85	0-80	5-30	1.50-1.70	0.6-6	0.11-0.20	0.0-2.9	0.0-0.5	.28	.28			
152A:														
Drummer-------------	0-14	0-15	50-73	27-35	1.10-1.30	0.6-2	0.21-0.23	3.0-5.9	4.0-7.0	.24	.24	5	6	48
	14-41	0-15	50-80	20-35	1.20-1.45	0.6-2	0.21-0.24	3.0-5.9	0.5-2.0	.37	.37			
	41-47	15-55	12-70	15-33	1.30-1.55	0.6-2	0.17-0.20	3.0-5.9	0.2-0.5	.32	.32			
	47-60	15-80	0-75	10-32	1.40-1.70	0.6-6	0.11-0.19	0.0-2.9	0.0-0.2	.28	.28			
154A:														
Flanagan------------	0-18	2-7	66-78	20-27	1.25-1.45	0.6-2	0.16-0.22	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	18-38	2-7	53-63	35-40	1.30-1.50	0.2-0.6	0.11-0.17	6.0-8.9	0.5-1.8	.37	.37			
	38-45	3-15	50-73	24-35	1.30-1.50	0.6-2	0.13-0.19	3.0-5.9	0.1-0.5	.37	.37			
	45-49	15-30	45-65	20-27	1.40-1.60	0.6-2	0.13-0.19	0.0-2.9	0.1-0.5	.37	.37			
	49-60	30-50	28-50	10-27	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.5	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
171A:														
Catlin--------------	0-11	0-8	65-82	18-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	2.5-4.0	.28	.28	5	6	48
	11-44	0-8	57-76	24-35	1.25-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.5	.37	.37			
	44-49	20-45	20-53	20-35	1.40-1.70	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	49-60	20-50	28-50	10-27	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
171B:														
Catlin--------------	0-11	0-8	65-82	18-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	2.5-4.0	.28	.28	5	6	48
	11-45	0-8	57-76	24-35	1.25-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.5	.37	.37			
	45-57	20-45	20-53	20-35	1.40-1.70	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	57-70	20-50	28-50	10-27	1.60-1.85	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.37	.37			
189A:														
Martinton-----------	0-12	5-25	50-70	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.24	.24	5	6	48
	12-39	5-25	30-60	35-45	1.25-1.45	0.2-0.6	0.11-0.20	3.0-5.9	0.5-2.0	.37	.37			
	39-60	10-65	5-75	15-42	1.40-1.60	0.2-0.6	0.11-0.22	3.0-5.9	0.0-0.5	.37	.37			
189B:														
Martinton-----------	0-10	5-25	50-70	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.24	.24	5	6	48
	10-34	5-25	30-60	35-45	1.25-1.45	0.2-0.6	0.11-0.20	3.0-5.9	0.5-2.0	.37	.37			
	34-60	10-65	5-75	15-42	1.40-1.60	0.2-0.6	0.11-0.22	3.0-5.9	0.0-0.5	.37	.37			
191A:														
Knight--------------	0-10	2-10	63-78	20-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	10-22	3-10	65-79	18-25	1.20-1.40	0.2-0.6	0.20-0.22	0.0-2.9	0.0-1.0	.43	.43			
	22-70	3-10	55-75	22-35	1.30-1.50	0.2-0.6	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	70-80	20-75	20-50	5-30	1.40-1.70	0.6-2	0.08-0.16	0.0-2.9	0.0-0.4	.28	.32			
192A:														
Del Rey-------------	0-4	3-25	50-80	15-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	4-9	3-25	50-80	15-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	9-33	3-20	40-62	35-45	1.40-1.65	0.06-0.2	0.12-0.20	3.0-5.9	0.0-1.0	.37	.37			
	33-41	3-20	40-67	30-42	1.45-1.65	0.06-0.2	0.11-0.19	3.0-5.9	0.0-0.5	.37	.37			
	41-60	3-25	45-75	22-33	1.50-1.70	0.06-0.2	0.09-0.11	3.0-5.9	0.0-0.5	.43	.43			
193A:														
Mayville------------	0-8	2-15	60-88	10-25	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-12	2-15	60-88	10-25	1.45-1.60	0.6-2	0.19-0.23	0.0-2.9	0.5-1.0	.49	.49			
	12-24	2-15	50-73	25-35	1.55-1.65	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	24-31	15-52	28-65	20-35	1.55-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	31-60	15-55	25-70	15-33	1.65-1.85	0.06-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
193B:														
Mayville------------	0-6	2-15	60-88	10-25	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	6-8	2-15	60-88	10-25	1.45-1.60	0.6-2	0.19-0.23	0.0-2.9	0.5-1.0	.49	.49			
	8-28	2-15	50-73	25-35	1.55-1.65	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	28-32	15-52	28-65	20-35	1.55-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	32-60	15-60	25-70	15-33	1.65-1.85	0.06-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
193C2:														
Mayville------------	0-6	2-15	60-88	10-25	1.40-1.60	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.43	.43	5	5	56
	6-24	2-15	50-73	25-35	1.55-1.65	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	24-34	15-52	28-65	20-35	1.55-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	34-60	15-55	25-70	15-33	1.65-1.85	0.06-0.6	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
198A:														
Elburn--------------	0-16	2-7	66-76	22-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	16-49	2-7	58-73	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	49-58	30-55	30-55	15-20	1.45-1.65	0.6-2	0.14-0.17	0.0-2.9	0.1-0.5	.37	.37			
	58-62	60-80	10-25	5-15	1.50-1.70	2-6	0.06-0.10	0.0-2.9	0.1-0.5	.24	.24			
199A:														
Plano---------------	0-14	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	14-49	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	49-60	30-70	10-50	15-32	1.50-1.70	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.28	.28			
	60-80	39-89	3-51	5-20	1.60-1.80	2-6	0.09-0.14	0.0-2.9	0.1-0.5	.20	.20			
199B:														
Plano---------------	0-15	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	15-45	0-10	55-80	20-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.37	.37			
	45-55	30-70	10-50	15-32	1.50-1.70	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.28	.28			
	55-80	39-89	3-51	5-20	1.60-1.80	2-6	0.09-0.14	0.0-2.9	0.1-0.5	.20	.20			
199C2:														
Plano---------------	0-8	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	8-41	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	41-53	30-70	10-50	15-32	1.50-1.70	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.28	.28			
	53-80	39-89	3-51	5-20	1.60-1.80	2-6	0.09-0.14	0.0-2.9	0.1-0.5	.20	.20			
206A:														
Thorp---------------	0-14	0-10	63-80	20-27	1.15-1.35	0.6-2	0.16-0.22	0.0-2.9	4.0-6.0	.28	.28	5	6	48
	14-19	0-10	65-82	18-25	1.30-1.50	0.2-0.6	0.16-0.22	0.0-2.9	0.2-1.0	.43	.43			
	19-43	0-10	55-78	22-35	1.35-1.55	0.06-0.2	0.13-0.19	3.0-5.9	0.2-1.0	.37	.37			
	43-50	20-55	15-62	18-30	1.40-1.60	0.6-2	0.10-0.20	0.0-5.9	0.2-0.5	.32	.32			
	50-65	48-80	1-47	5-20	1.50-1.70	0.6-6	0.05-0.13	0.0-2.9	0.0-0.1	.24	.24			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
210A:														
Lena----------------	0-10	---	---	---	0.15-0.45	2-6	0.35-0.45	---	60-99	---	---	3	2	134
	10-68	---	---	---	0.15-0.45	2-6	0.35-0.45	---	60-99	---	---			
	68-80	---	---	---	0.15-0.45	2-6	0.35-0.45	---	60-99	---	---			
219A:														
Millbrook-----------	0-7	0-15	58-82	18-27	1.40-1.60	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	7-24	0-15	50-75	25-35	1.45-1.65	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	24-53	15-60	8-67	18-32	1.45-1.70	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	53-80	20-85	0-70	10-30	1.50-1.75	0.6-6	0.11-0.19	0.0-2.9	0.0-0.5	.28	.28			
223B:														
Varna---------------	0-12	5-20	53-75	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.5-4.0	.24	.24	4	6	48
	12-30	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	30-48	5-20	35-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	48-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
223B2:														
Varna---------------	0-7	5-20	53-75	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.28	.28	4	6	48
	7-26	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	26-38	5-20	35-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	38-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
223C2:														
Varna---------------	0-9	5-20	53-75	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.28	.28	4	6	48
	9-29	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	29-50	5-20	35-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	50-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
223C3:														
Varna---------------	0-6	5-20	45-68	27-35	1.30-1.50	0.2-0.6	0.10-0.21	3.0-5.9	0.5-2.0	.37	.37	3	6	48
	6-16	5-20	30-60	35-50	1.40-1.60	0.06-0.6	0.10-0.19	3.0-5.9	0.5-1.5	.37	.37			
	16-19	5-20	35-60	30-45	1.50-1.70	0.06-0.2	0.10-0.19	3.0-5.9	0.2-1.0	.37	.37			
	19-60	5-22	40-68	27-40	1.70-1.90	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
223D3:														
Varna---------------	0-8	5-20	45-68	27-35	1.30-1.50	0.2-0.6	0.10-0.21	3.0-5.9	0.5-2.0	.37	.37	3	6	48
	8-20	5-20	30-60	35-50	1.50-1.70	0.2-0.6	0.09-0.19	3.0-5.9	0.5-1.0	.37	.37			
	20-60	5-25	35-68	27-40	1.65-1.85	0.06-0.2	0.05-0.10	0.0-2.9	0.2-0.5	.43	.43			
224C2:														
Strawn--------------	0-8	5-30	50-77	18-27	1.35-1.55	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	8-23	10-35	30-65	25-35	1.50-1.70	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	23-60	15-45	25-65	20-30	1.65-1.85	0.06-0.6	0.08-0.12	0.0-2.9	0.2-0.5	.43	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
224C3:														
Strawn--------------	0-8	10-30	35-63	27-35	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.5-2.0	.32	.32	3	6	48
	8-24	10-35	30-65	25-35	1.50-1.70	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.37	.37			
	24-60	15-45	25-65	20-30	1.65-1.85	0.06-0.6	0.08-0.12	0.0-2.9	0.2-0.5	.43	.43			
224D2:														
Strawn--------------	0-9	5-30	50-77	18-27	1.35-1.55	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	9-21	10-35	30-65	25-35	1.50-1.70	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	21-60	15-45	25-65	20-30	1.65-1.85	0.06-0.6	0.08-0.12	0.0-2.9	0.2-0.5	.43	.43			
224D3:														
Strawn--------------	0-8	10-30	35-63	27-35	1.40-1.60	0.6-2	0.16-0.20	3.0-5.9	0.5-2.0	.32	.32	3	6	48
	8-19	10-35	30-65	25-35	1.50-1.70	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.37	.37			
	19-60	15-45	25-65	20-30	1.65-1.85	0.06-0.6	0.08-0.12	0.0-2.9	0.2-0.5	.43	.43			
224F2:														
Strawn--------------	0-5	5-30	50-77	18-27	1.35-1.55	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	5-18	10-35	30-65	25-35	1.50-1.70	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	18-60	15-45	25-65	20-30	1.65-1.85	0.06-0.6	0.08-0.12	0.0-2.9	0.2-0.5	.43	.43			
228A:														
Nappanee------------	0-5	5-20	53-75	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	5-8	5-20	53-77	18-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	8-26	5-20	20-50	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	26-48	5-25	20-55	40-55	1.60-1.80	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	48-75	5-25	30-65	30-45	1.70-1.90	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			
228B:														
Nappanee------------	0-4	5-20	53-75	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	4	6	48
	4-9	5-20	53-77	18-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.2-1.0	.37	.37			
	9-23	5-20	20-50	45-60	1.40-1.65	0.06-0.2	0.08-0.14	3.0-5.9	0.2-1.0	.32	.32			
	23-46	5-25	20-55	40-55	1.60-1.80	0.02-0.06	0.06-0.12	3.0-5.9	0.1-0.5	.32	.32			
	46-60	5-25	30-65	30-45	1.70-1.90	0.02-0.06	0.01-0.05	3.0-5.9	0.0-0.5	.37	.37			
232A:														
Ashkum--------------	0-12	1-15	45-64	35-40	1.20-1.45	0.2-0.6	0.18-0.21	6.0-8.9	3.0-7.0	.20	.20	5	4	86
	12-29	2-15	40-63	35-45	1.30-1.50	0.2-0.6	0.15-0.18	6.0-8.9	0.5-2.5	.32	.32			
	29-54	5-20	40-65	30-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	54-60	5-20	45-68	27-35	1.55-1.75	0.2-0.6	0.07-0.15	3.0-5.9	0.0-0.5	.43	.43			
233A:														
Birkbeck------------	0-8	0-8	65-85	15-27	1.20-1.40	0.6-2	0.21-0.29	0.0-2.9	1.5-4.5	.43	.43	5	5	56
	8-11	0-8	65-85	15-27	1.35-1.55	0.6-2	0.17-0.22	0.0-2.9	0.1-1.5	.49	.49			
	11-46	0-10	55-75	25-35	1.35-1.45	0.6-2	0.16-0.20	3.0-5.9	0.1-1.0	.37	.37			
	46-56	15-40	25-65	20-35	1.45-1.55	0.6-2	0.11-0.16	0.0-2.9	0.1-0.5	.32	.32			
	56-60	15-40	30-68	17-30	1.60-1.85	0.2-0.6	0.10-0.15	0.0-2.9	0.0-0.5	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
234A:														
Sunbury-------------	0-8	2-7	68-78	18-25	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	5	56
	8-15	2-7	63-78	18-30	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	0.5-1.0	.49	.49			
	15-36	2-7	53-63	35-42	1.30-1.50	0.2-0.6	0.17-0.21	6.0-8.9	0.1-0.5	.37	.37			
	36-43	3-15	50-72	25-35	1.30-1.50	0.6-2	0.17-0.21	3.0-5.9	0.1-0.5	.37	.37			
	43-47	15-30	45-65	20-27	1.40-1.60	0.6-2	0.10-0.17	0.0-2.9	0.1-0.5	.37	.37			
	47-72	30-40	33-50	15-27	1.65-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.1-0.5	.37	.37			
235A:														
Bryce---------------	0-13	2-15	40-58	40-50	1.30-1.50	0.2-0.6	0.12-0.16	6.0-8.9	4.0-7.0	.17	.17	5	4	86
	13-45	5-20	28-53	42-52	1.35-1.60	0.06-0.2	0.09-0.13	6.0-8.9	0.5-3.0	.32	.32			
	45-58	5-20	20-55	40-60	1.50-1.70	0.02-0.06	0.07-0.11	6.0-8.9	0.1-0.5	.32	.32			
	58-66	5-20	25-57	38-55	1.60-1.75	0.02-0.06	0.03-0.05	3.0-5.9	0.0-0.5	.37	.37			
242A:														
Kendall-------------	0-7	0-10	65-86	14-25	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-11	0-10	65-86	14-25	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.1-1.0	.49	.49			
	11-51	0-10	55-73	27-35	1.30-1.50	0.6-2	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	51-58	30-50	33-50	15-27	1.45-1.55	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.32			
	58-80	30-55	25-50	10-20	1.55-1.75	0.6-2	0.11-0.15	0.0-2.9	0.1-0.3	.32	.32			
243C2:														
St. Charles---------	0-8	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	8-41	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	41-60	30-60	25-50	15-30	1.30-1.50	0.6-2	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			
293A:														
Andres--------------	0-11	10-30	50-70	20-27	1.35-1.55	0.6-2	0.17-0.21	0.0-2.9	3.5-5.0	.24	.24	5	6	48
	11-36	15-50	15-58	24-35	1.50-1.70	0.6-2	0.12-0.16	3.0-5.9	0.5-1.5	.32	.32			
	36-50	5-20	45-68	27-35	1.55-1.75	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	50-60	5-20	45-73	22-35	1.65-1.85	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
294B:														
Symerton------------	0-15	10-30	50-70	20-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	2.5-4.0	.24	.24	5	6	48
	15-19	10-20	45-63	27-35	1.40-1.60	0.6-2	0.17-0.22	3.0-5.9	1.0-3.0	.24	.24			
	19-35	25-50	15-50	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.28	.32			
	35-39	2-20	45-74	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	39-60	2-20	48-78	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
294C2:														
Symerton------------	0-8	10-30	50-70	20-27	1.30-1.50	0.6-2	0.17-0.21	0.0-2.9	2.0-3.0	.28	.28	5	6	48
	8-31	25-50	15-50	24-35	1.45-1.70	0.6-2	0.10-0.15	3.0-5.9	0.1-1.0	.32	.32			
	31-40	2-20	45-74	24-35	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	40-60	2-20	48-78	20-32	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
318C2:														
Lorenzo-------------	0-7	25-40	33-50	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-3.0	.28	.28	3	6	48
	7-16	30-75	5-50	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	16-60	85-99	0-14	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
318D2:														
Lorenzo-------------	0-5	25-40	33-50	18-27	1.25-1.40	0.6-2	0.20-0.22	0.0-2.9	2.0-3.0	.24	.24	3	6	48
	5-15	30-75	5-50	20-35	1.60-1.70	2-6	0.10-0.19	3.0-5.9	0.0-1.0	.28	.32			
	15-60	85-99	0-14	1-5	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
324B:														
Ripon---------------	0-12	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	0.0-2.9	0.2-4.0	.28	.28	2	6	48
	12-29	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	29-35	25-55	15-50	24-35	1.55-1.70	0.6-2	0.14-0.19	3.0-5.9	0.0-0.5	.32	.32			
	35-60	---	---	---	---	0.01-0.6	---	---	---	---	---			
324C2:														
Ripon---------------	0-7	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-3.5	.28	.28	2	6	48
	7-24	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	24-31	25-55	15-50	24-35	1.55-1.70	0.6-2	0.14-0.19	3.0-5.9	0.0-0.5	.32	.32			
	31-60	---	---	---	---	0.01-0.6	---	---	---	---	---			
325A:														
Dresden-------------	0-9	2-30	50-80	18-27	1.25-1.40	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	9-29	5-50	25-70	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	29-33	30-70	5-50	20-30	1.45-1.70	0.6-2	0.08-0.18	3.0-5.9	0.0-0.5	.28	.32			
	33-60	75-99	0-24	1-5	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
325B:														
Dresden-------------	0-7	2-30	50-80	18-27	1.25-1.40	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	4	6	48
	7-16	5-50	25-70	25-35	1.35-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.32	.32			
	16-30	30-70	5-50	20-30	1.45-1.70	0.6-2	0.08-0.18	3.0-5.9	0.0-0.5	.28	.32			
	30-60	75-99	0-24	1-5	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
327B:														
Fox-----------------	0-4	5-30	50-80	15-25	1.30-1.50	0.6-2	0.17-0.24	0.0-2.9	1.0-3.0	.32	.32	4	5	56
	4-7	5-30	50-80	15-25	1.35-1.55	0.6-2	0.16-0.23	0.0-2.9	0.2-1.0	.37	.37			
	7-13	5-30	50-77	18-35	1.50-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	13-28	20-75	5-50	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.32			
	28-60	90-98	0-10	0-2	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
327C2:														
Fox-----------------	0-4	5-30	50-80	15-25	1.30-1.50	0.6-2	0.17-0.24	0.0-2.9	1.0-2.0	.32	.32	4	5	56
	4-12	5-30	50-77	18-35	1.50-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	12-24	20-75	5-50	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.32			
	24-60	90-98	0-10	0-2	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
330A:														
Peotone	0-13	0-10	50-67	33-40	1.20-1.40	0.2-0.6	0.21-0.23	6.0-8.9	5.0-7.0	.24	.24	5	4	86
	13-50	0-10	45-65	35-45	1.30-1.60	0.2-0.6	0.11-0.20	6.0-8.9	0.5-3.0	.37	.37			
	50-60	0-20	38-75	25-42	1.40-1.65	0.2-0.6	0.10-0.20	6.0-8.9	0.2-0.5	.43	.43			
356A:														
Elpaso	0-21	1-10	55-72	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	4.0-7.0	.24	.24	5	6	48
	21-44	1-10	50-75	24-40	1.20-1.40	0.6-2	0.22-0.24	3.0-5.9	0.2-2.0	.37	.37			
	44-69	2-30	30-78	20-40	1.35-1.60	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	69-80	2-30	40-83	15-30	1.60-1.85	0.2-0.6	0.05-0.15	0.0-2.9	0.0-0.5	.43	.43			
369A:														
Waupecan	0-13	5-15	68-80	15-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	4	6	48
	13-38	5-15	50-70	25-35	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	38-55	35-75	5-50	10-30	1.55-1.75	2-6	0.08-0.18	0.0-2.9	0.2-0.5	.28	.32			
	55-70	80-99	0-20	0-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.2-0.5	.02	.05			
369B:														
Waupecan	0-11	5-15	68-80	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	4	6	48
	11-39	5-15	50-70	25-35	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	39-45	35-75	5-50	10-30	1.55-1.75	0.6-6	0.08-0.18	0.0-2.9	0.2-0.5	.28	.32			
	45-60	80-99	0-20	0-10	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
442A:														
Mundelein	0-17	0-15	58-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	17-31	0-15	50-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	31-42	10-60	10-75	15-30	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.2-0.5	.32	.32			
	42-60	10-75	5-80	5-25	1.50-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.2	.28	.28			
443A:														
Barrington	0-13	0-15	58-80	20-27	1.20-1.40	0.6-2	0.22-0.26	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	13-28	0-15	50-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	28-44	10-60	10-75	15-30	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.2-0.5	.32	.32			
	44-66	10-90	2-80	2-25	1.50-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.2	.28	.28			
443B:														
Barrington	0-11	0-15	58-80	20-27	1.20-1.40	0.6-2	0.22-0.26	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	11-32	0-15	50-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	32-42	10-60	10-75	15-30	1.40-1.55	0.6-2	0.12-0.18	0.0-2.9	0.2-0.5	.32	.32			
	42-60	10-90	2-80	2-25	1.50-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.2	.28	.28			
512A:														
Danabrook	0-19	0-15	58-82	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	5	6	48
	19-34	0-15	50-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	34-53	25-52	14-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	53-60	35-60	20-45	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.2-0.5	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
512B:														
Danabrook-----------	0-13	0-15	58-82	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	5	6	48
	13-33	0-15	50-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	33-50	25-52	14-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	50-60	35-60	20-45	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.2-0.5	.37	.37			
512C2:														
Danabrook-----------	0-8	0-15	58-82	18-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.37	.37	5	6	48
	8-27	0-15	50-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	27-40	25-52	14-50	20-34	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.32	.32			
	40-65	35-60	20-45	15-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.2-0.5	.37	.37			
541A:														
Graymont------------	0-12	0-10	63-78	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	12-21	0-10	55-75	25-35	1.30-1.50	0.6-2	0.16-0.20	3.0-5.9	0.2-2.0	.37	.37			
	21-33	10-20	40-68	22-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	33-60	10-20	50-66	24-34	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
541B:														
Graymont------------	0-12	0-10	63-78	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	12-33	0-10	55-75	25-35	1.30-1.50	0.6-2	0.16-0.20	3.0-5.9	0.2-2.0	.37	.37			
	33-38	10-20	40-68	22-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	38-60	10-20	50-66	24-34	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
541B2:														
Graymont------------	0-8	0-10	63-78	22-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.37	.37	5	6	48
	8-24	0-10	55-75	25-35	1.25-1.45	0.6-2	0.16-0.20	3.0-5.9	0.0-2.0	.37	.37			
	24-35	10-20	40-68	22-40	1.50-1.75	0.06-0.6	0.14-0.18	3.0-5.9	0.0-0.5	.37	.37			
	35-60	10-20	46-66	24-34	1.50-1.75	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
541C2:														
Graymont------------	0-9	0-10	63-78	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.37	.37	5	6	48
	9-30	0-10	55-75	25-35	1.30-1.50	0.6-2	0.16-0.20	3.0-5.9	0.2-2.0	.37	.37			
	30-38	10-20	40-68	22-40	1.50-1.70	0.06-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	38-60	10-20	50-66	24-34	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
614A:														
Chenoa--------------	0-12	1-8	57-72	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-5.0	.28	.28	5	6	48
	12-32	1-8	47-64	35-45	1.30-1.50	0.2-0.6	0.18-0.21	6.0-8.9	0.5-1.5	.37	.37			
	32-36	5-20	40-70	25-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	36-60	5-20	45-71	24-35	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
614B:														
Chenoa--------------	0-15	1-8	57-72	27-35	1.20-1.40	0.6-2	0.19-0.22	3.0-5.9	3.5-5.0	.28	.28	5	6	48
	15-28	1-8	47-64	35-45	1.30-1.50	0.6-2	0.18-0.21	6.0-8.9	0.5-1.5	.37	.37			
	28-47	5-20	40-70	25-40	1.50-1.70	0.2-0.6	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	47-60	5-20	45-71	24-35	1.60-1.80	0.06-0.2	0.05-0.10	0.0-2.9	0.0-0.5	.43	.43			
663A:														
Clare---------------	0-11	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	11-32	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	32-61	20-65	10-50	15-32	1.30-1.55	0.6-2	0.13-0.19	3.0-5.9	0.2-1.0	.32	.32			
	61-80	30-82	5-50	5-20	1.40-1.70	0.6-6	0.07-0.19	0.0-2.9	0.2-0.5	.24	.28			
663B:														
Clare---------------	0-14	2-15	63-80	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.5-4.0	.28	.28	5	6	48
	14-36	1-10	55-74	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	36-44	15-45	23-65	20-32	1.30-1.55	0.6-2	0.13-0.19	3.0-5.9	0.2-0.5	.32	.32			
	44-60	40-60	20-50	10-20	1.40-1.70	0.6-2	0.13-0.19	0.0-2.9	0.1-0.5	.32	.32			
667A:														
Kaneville-----------	0-8	0-10	63-85	15-27	1.25-1.45	0.6-2	0.22-0.25	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	8-42	0-10	56-75	25-34	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	42-56	15-60	20-70	15-32	1.30-1.50	0.6-2	0.11-0.16	3.0-5.9	0.2-0.5	.32	.32			
	56-80	20-80	10-77	3-30	1.40-1.70	0.6-6	0.07-0.11	0.0-2.9	0.0-0.2	.28	.28			
667B:														
Kaneville-----------	0-9	0-10	63-85	15-27	1.25-1.45	0.6-2	0.22-0.25	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-44	0-10	56-75	25-34	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	44-52	15-60	20-70	15-32	1.30-1.50	0.6-2	0.11-0.16	3.0-5.9	0.2-0.5	.32	.32			
	52-80	20-80	10-77	3-30	1.40-1.70	0.6-6	0.07-0.11	0.0-2.9	0.0-0.2	.28	.28			
668B:														
Somonauk------------	0-9	0-10	63-86	14-27	1.25-1.45	0.6-2	0.21-0.25	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	9-26	0-10	55-78	22-35	1.35-1.55	0.6-2	0.14-0.24	3.0-5.9	0.2-1.0	.37	.37			
	26-55	15-70	5-70	15-32	1.45-1.65	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	55-60	30-90	0-65	5-20	1.55-1.70	0.6-6	0.07-0.17	0.0-2.9	0.0-0.5	.20	.28			
679A:														
Blackberry----------	0-11	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	11-52	0-10	55-75	25-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	52-68	15-60	5-70	15-35	1.30-1.55	0.6-2	0.11-0.22	3.0-5.9	0.1-0.5	.32	.32			
	68-80	15-80	5-80	5-29	1.40-1.70	0.6-6	0.05-0.19	0.0-2.9	0.0-0.5	.24	.28			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
679B:														
Blackberry----------	0-16	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	16-47	1-10	55-74	25-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	47-62	20-50	35-55	15-25	1.40-1.60	0.6-2	0.11-0.22	0.0-2.9	0.1-0.5	.32	.32			
	62-70	30-60	20-55	5-20	1.50-1.70	0.6-2	0.13-0.17	0.0-2.9	0.1-0.5	.37	.37			
680A:														
Campton-------------	0-6	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	6-50	0-10	55-75	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	50-61	20-65	5-65	15-30	1.30-1.50	0.6-2	0.11-0.16	3.0-5.9	0.0-0.5	.32	.32			
	61-73	25-80	10-50	2-25	1.55-1.75	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.28	.28			
680B:														
Campton-------------	0-8	0-10	63-85	15-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-45	0-10	55-75	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	45-51	20-65	5-65	15-30	1.30-1.50	0.6-2	0.11-0.16	3.0-5.9	0.0-0.5	.32	.32			
	51-80	25-80	10-50	2-25	1.55-1.75	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.24	.28			
791A:														
Rush----------------	0-4	0-15	58-88	12-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	4-11	0-15	58-88	12-27	1.25-1.40	0.6-2	0.21-0.23	0.0-2.9	0.5-1.0	.49	.49			
	11-38	0-15	51-78	22-34	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	38-45	25-75	5-50	18-30	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.28	.32			
	45-60	85-98	0-13	2-6	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
791B:														
Rush----------------	0-7	0-15	58-88	12-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	7-11	0-15	58-88	12-27	1.25-1.40	0.6-2	0.21-0.23	0.0-2.9	0.5-1.0	.49	.49			
	11-35	0-15	51-78	22-34	1.35-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	35-46	25-75	5-50	20-30	1.40-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.28	.32			
	46-60	85-98	0-13	2-6	1.60-1.80	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
802B:														
Orthents, loamy-----	0-6	23-50	28-50	22-27	1.70-1.75	0.2-0.6	0.18-0.22	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	6-60	20-52	25-58	22-30	1.70-1.80	0.2-0.6	0.12-0.20	3.0-5.9	0.2-1.0	.43	.43			
820E:														
Hennepin------------	0-5	15-55	15-70	15-30	1.20-1.40	0.6-2	0.18-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-18	15-55	20-67	18-30	1.30-1.60	0.6-2	0.14-0.22	0.0-2.9	0.0-0.5	.32	.32			
	18-60	15-55	20-70	15-30	1.70-1.85	0.2-0.6	0.10-0.15	0.0-2.9	0.0-0.5	.37	.37			
Casco---------------	0-6	15-30	50-70	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	6-20	23-65	2-50	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.2-1.0	.28	.32			
	20-60	87-98	1-13	0-10	1.30-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
820G:														
Hennepin------------	0-5	15-55	15-70	15-30	1.20-1.40	0.6-2	0.18-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	5-16	15-55	20-67	18-30	1.30-1.60	0.6-2	0.14-0.22	0.0-2.9	0.0-0.5	.32	.32			
	16-60	15-55	20-70	15-30	1.70-1.85	0.2-0.6	0.10-0.15	0.0-2.9	0.0-0.5	.37	.37			
Casco---------------	0-7	15-30	43-70	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	7-15	23-50	20-50	18-35	1.55-1.65	0.6-2	0.09-0.19	0.0-2.9	0.2-1.0	.28	.32			
	15-60	85-99	1-14	0-10	1.30-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
864. Pits, quarry														
865. Pits, gravel														
969E2:														
Casco---------------	0-5	25-50	28-50	12-25	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-2.0	.32	.32	3	5	56
	5-19	20-60	10-50	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.2-1.0	.28	.32			
	19-60	87-98	0-13	0-5	1.45-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
Rodman--------------	0-6	30-50	23-55	8-25	1.20-1.50	2-6	0.10-0.12	0.0-2.9	2.0-3.0	.20	.24	3	8	0
	6-10	40-80	0-55	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.24	.28			
	10-60	85-98	0-15	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
969F:														
Casco---------------	0-4	25-50	28-50	12-25	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	4-15	20-60	10-50	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.2-1.0	.28	.32			
	15-60	87-98	0-13	0-5	1.45-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
Rodman--------------	0-11	30-50	23-55	8-25	1.20-1.50	2-6	0.10-0.12	0.0-2.9	2.0-4.0	.20	.24	3	8	0
	11-14	40-80	0-55	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.24	.28			
	14-60	85-98	0-15	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-1.0	.02	.05			
3082A:														
Millington----------	0-26	5-30	50-75	20-27	1.35-1.55	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.32	.32	5	4L	86
	26-53	10-40	25-70	20-35	1.40-1.60	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.32	.32			
	53-60	15-60	5-67	18-35	1.50-1.70	0.6-2	0.14-0.20	3.0-5.9	0.1-2.0	.28	.28			
3107A:														
Sawmill-------------	0-29	3-15	58-70	27-35	1.25-1.40	0.6-2	0.19-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
	29-48	5-20	45-68	27-35	1.30-1.45	0.6-2	0.17-0.20	3.0-5.9	1.0-3.5	.32	.32			
	48-60	5-25	40-70	25-35	1.35-1.50	0.6-2	0.17-0.20	3.0-5.9	0.2-2.0	.32	.32			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
8082A:														
Millington----------	0-26	5-30	50-75	20-27	1.35-1.55	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.32	.32	5	4L	86
	26-36	10-40	25-70	20-35	1.40-1.60	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.32	.32			
	36-62	15-60	5-67	18-35	1.50-1.70	0.6-2	0.14-0.20	3.0-5.9	0.1-2.0	.28	.28			
8304A:														
Landes--------------	0-16	52-75	5-41	7-20	1.40-1.60	2-6	0.13-0.20	0.0-2.9	1.0-2.5	.20	.20	4	3	86
	16-34	50-88	1-45	5-18	1.60-1.70	2-6	0.10-0.15	0.0-2.9	0.5-1.0	.24	.24			
	34-62	50-94	1-48	2-15	1.60-1.80	6-20	0.05-0.15	0.0-2.9	0.0-0.5	.10	.10			
8321A:														
Du Page-------------	0-30	5-30	50-77	18-27	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.32	.32	5	4L	86
	30-35	15-60	20-65	18-27	1.45-1.65	0.6-2	0.10-0.20	0.0-2.9	0.5-3.0	.32	.32			
	35-60	15-65	11-75	6-24	1.50-1.70	0.6-2	0.08-0.20	0.0-2.9	0.2-1.0	.32	.32			

Table 21.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
44A:					
Pella----------------	0-11	6.1-7.8	23-29	---	0
	11-32	6.6-7.8	21-28	---	0-10
	32-38	7.4-8.4	12-25	---	5-30
	38-47	7.8-8.4	4.1-22	---	5-40
	47-60	---	---	---	---
59A:					
Lisbon---------------	0-11	5.6-7.3	17-23	---	0
	11-36	5.6-7.8	20-28	---	0
	36-39	6.1-8.4	16-26	---	0-20
	39-70	7.4-8.4	11-25	---	15-40
60B2:					
La Rose--------------	0-8	6.6-7.8	9.7-17	---	0
	8-19	6.1-7.8	14-18	---	0-5
	19-60	7.4-8.4	10-17	---	15-40
60C2:					
La Rose--------------	0-7	6.6-7.8	9.7-17	---	0
	7-19	6.1-7.8	14-18	---	0-5
	19-60	7.4-8.4	10-17	---	15-40
60C3:					
La Rose--------------	0-8	6.6-7.8	14-19	---	0
	8-22	6.1-7.8	14-18	---	0-5
	22-60	7.4-8.4	10-17	---	15-40
67A:					
Harpster-------------	0-18	7.9-8.4	27-40	---	15-40
	18-41	7.4-8.4	18-27	---	5-40
	41-56	7.9-8.4	9.0-23	---	5-40
	56-60	7.9-8.4	4.0-16	---	10-40
69A:					
Milford--------------	0-9	5.6-7.3	26-36	---	0
	9-22	5.6-7.3	28-36	---	0
	22-50	5.6-7.8	22-29	---	0-10
	50-60	6.6-8.4	4.0-18	---	0-30
88D:					
Sparta---------------	0-8	5.1-7.3	0.0-10.0	---	0
	8-17	5.1-7.3	0.0-9.2	---	0
	17-33	5.1-7.3	1.2-7.8	---	0
	33-72	5.1-6.0	2.8-13	---	0
91A:					
Swygert--------------	0-12	5.6-7.3	20-31	---	0
	12-26	5.6-7.3	20-31	---	0
	26-51	7.4-8.4	10-25	---	2-20
	51-60	7.9-8.4	9.0-20	---	15-30
91B:					
Swygert--------------	0-11	5.6-7.3	20-31	---	0
	11-23	5.6-7.3	20-31	---	0
	23-45	7.4-8.4	10-25	---	2-20
	45-60	7.9-8.4	9.0-20	---	15-30

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
91B2:					
Swygert	0-7	5.6-7.3	20-31	---	0
	7-30	5.6-7.3	20-31	---	0
	30-48	7.4-8.4	10-25	---	2-20
	48-60	7.9-8.4	9.0-20	---	15-30
91C2:					
Swygert	0-7	5.6-7.3	20-31	---	0
	7-18	5.6-7.3	20-31	---	0
	18-36	7.4-8.4	10-25	---	2-20
	36-60	7.9-8.4	9.0-20	---	15-30
101A:					
Brenton	0-13	5.6-7.3	17-23	---	0
	13-37	5.6-7.3	20-28	---	0
	37-42	5.6-7.8	13-23	---	0-5
	42-60	---	---	---	---
103A:					
Houghton	0-11	5.1-7.3	140-200	---	0
	11-60	5.1-7.3	100-200	---	0
104A:					
Virgil	0-7	6.1-7.8	13-24	---	0
	7-13	5.1-7.3	9.0-17	---	0
	13-49	5.1-7.8	16-23	---	0
	49-58	5.6-7.8	9.0-19	---	0-10
	58-60	6.1-8.4	6.0-19	---	0-20
134C2:					
Camden	0-7	5.1-7.3	12-22	---	0
	7-34	5.1-7.3	19-27	---	0
	34-43	5.1-7.3	15-23	---	0
	43-80	6.1-7.8	4.1-12	---	0-25
137A:					
Clare	0-14	5.6-7.8	16-23	---	0
	14-38	5.1-7.3	20-28	---	0
	38-51	5.6-7.8	14-25	---	0-5
	51-60	---	---	---	---
137B:					
Clare	0-14	5.6-7.8	16-23	---	0
	14-29	5.1-7.3	20-28	---	0
	29-43	5.6-7.8	16-25	---	0-5
	43-60	---	---	---	---
145A:					
Saybrook	0-13	5.6-7.3	13-23	---	0
	13-31	5.6-7.3	21-28	---	0
	31-36	6.6-7.8	20-27	---	0-5
	36-60	7.4-8.4	13-25	---	15-40
145B:					
Saybrook	0-15	5.6-7.3	13-23	---	0
	15-32	5.6-7.3	21-28	---	0
	32-36	6.6-7.8	20-27	---	0-5
	36-60	7.4-8.4	13-25	---	15-40

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
145B2:					
Saybrook	0-8	5.6-7.3	17-23	---	0
	8-28	5.1-7.3	20-28	---	0
	28-31	6.6-7.8	20-27	---	0-5
	31-60	7.4-8.4	13-25	---	15-40
145C2:					
Saybrook	0-9	5.6-7.3	17-23	---	0
	9-30	5.1-7.3	20-28	---	0
	30-36	6.6-7.8	20-27	---	0-5
	36-60	7.4-8.4	13-25	---	15-40
146B:					
Elliott	0-9	5.6-7.3	16-32	---	0
	9-13	5.6-7.3	27-40	---	0
	13-17	6.1-7.3	15-36	---	0
	17-35	6.6-7.8	13-24	---	0-15
	35-60	7.4-8.4	11-22	---	10-35
148A:					
Proctor	0-11	5.1-7.8	16-24	---	0
	11-27	5.6-7.3	16-25	---	0
	27-44	5.6-7.3	11-23	---	0
	44-73	6.1-7.8	3.0-16	---	0-10
148B:					
Proctor	0-11	5.1-7.8	17-24	---	0
	11-28	5.6-7.3	16-25	---	0
	28-33	5.6-7.3	11-21	---	0
	33-60	5.6-7.8	3.0-13	---	0-10
148C2:					
Proctor	0-8	5.1-7.8	15-23	---	0
	8-32	5.6-7.3	16-25	---	0
	32-48	5.6-7.3	15-23	---	0
	48-60	6.1-7.8	4.0-12	---	0-10
149A:					
Brenton	0-12	5.6-7.3	18-26	---	0
	12-28	5.6-7.3	15-23	---	0
	28-44	5.6-7.8	12-19	---	0-5
	44-60	6.6-8.4	3.0-19	---	0-20
152A:					
Drummer	0-14	5.6-7.8	24-35	---	0
	14-41	5.6-7.8	13-25	---	0
	41-47	6.1-8.4	9.0-21	---	0-20
	47-60	6.6-8.4	6.0-20	---	0-40
154A:					
Flanagan	0-18	5.6-7.3	17-23	---	0
	18-38	5.6-7.3	26-31	---	0
	38-45	5.6-7.3	19-26	---	0
	45-49	6.1-7.8	15-21	---	0-10
	49-60	7.4-8.4	8.5-21	---	15-40
171A:					
Catlin	0-11	5.1-7.3	17-24	---	0
	11-44	5.1-7.3	14-23	---	0
	44-49	6.1-7.8	12-22	---	0-5
	49-60	7.4-8.4	4.0-16	---	5-25

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
171B:					
Catlin	0-11	5.1-7.3	16-24	---	0
	11-45	5.1-7.3	14-24	---	0
	45-57	6.1-7.8	12-22	---	0-5
	57-70	7.4-8.4	4.0-16	---	5-25
189A:					
Martinton	0-12	5.6-7.3	18-24	---	0
	12-39	5.6-7.8	18-24	---	0-10
	39-60	7.4-8.4	7.0-22	---	5-30
189B:					
Martinton	0-10	5.6-7.3	18-24	---	0
	10-34	5.6-7.8	18-24	---	0-10
	34-60	7.4-8.4	7.0-22	---	5-30
191A:					
Knight	0-10	5.1-7.3	17-23	---	0
	10-22	5.1-7.3	13-20	---	0
	22-70	5.1-7.3	15-27	---	0
	70-80	6.1-7.8	4.1-23	---	0
192A:					
Del Rey	0-4	4.5-7.3	10-20	---	0
	4-9	4.5-7.3	8.0-15	---	0
	9-33	4.5-7.8	18-24	12.1-21.8	0
	33-41	7.4-8.4	15-22	---	0-20
	41-60	7.4-8.4	11-18	---	5-40
193A:					
Mayville	0-8	5.1-7.3	8.9-21	---	0
	8-12	5.1-6.5	8.6-20	---	0
	12-24	5.1-6.5	19-27	---	0
	24-31	5.1-7.8	14-27	---	0-5
	31-60	7.4-8.4	11-25	---	1-30
193B:					
Mayville	0-6	5.1-7.3	8.9-21	---	0
	6-8	5.1-6.5	8.6-20	---	0
	8-28	5.1-6.5	19-27	---	0
	28-32	5.1-7.8	14-27	---	0-5
	32-60	7.4-8.4	11-25	---	1-30
193C2:					
Mayville	0-6	5.1-7.3	8.9-21	---	0
	6-24	5.1-6.5	19-27	---	0
	24-34	5.1-7.8	14-27	---	0-5
	34-60	7.4-8.4	11-25	---	1-30
198A:					
Elburn	0-16	6.1-7.3	16-32	---	0
	16-49	5.6-7.8	17-31	---	0
	49-58	6.6-7.8	6.0-13	---	0-5
	58-62	6.6-7.8	2.0-10	---	0-15
199A:					
Plano	0-14	6.1-7.3	16-23	---	0
	14-49	5.1-7.3	16-27	---	0
	49-60	5.6-7.8	7.8-17	---	0
	60-80	5.6-8.4	2.6-11	---	0-20

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
199B:					
Plano----------------	0-15	6.1-7.3	16-23	---	0
	15-45	5.1-7.3	16-27	---	0
	45-55	5.6-7.8	7.8-17	---	0
	55-80	5.6-8.4	2.6-11	---	0-20
199C2:					
Plano----------------	0-8	6.1-7.3	16-23	---	0
	8-41	5.1-7.3	16-27	---	0
	41-53	5.6-7.8	7.8-17	---	0
	53-80	5.6-8.4	2.6-11	---	0-20
206A:					
Thorp----------------	0-14	5.1-7.8	20-28	---	0
	14-19	5.1-7.3	11-17	---	0
	19-43	5.1-7.3	14-23	---	0
	43-50	5.6-7.8	11-19	---	0-5
	50-65	6.1-8.4	3.0-19	---	0-20
210A:					
Lena-----------------	0-10	7.4-8.4	124-222	---	5-40
	10-68	7.4-8.4	124-222	---	5-40
	68-80	7.4-8.4	124-222	---	5-40
219A:					
Millbrook------------	0-7	5.1-7.3	15-24	---	0
	7-24	5.1-7.3	15-23	---	0
	24-53	5.1-7.8	11-20	---	0-5
	53-80	5.6-8.4	6.0-19	---	0-20
223B:					
Varna----------------	0-12	5.6-7.3	15-22	---	0
	12-30	5.6-7.3	18-28	---	0
	30-48	7.4-8.4	15-25	---	0-15
	48-60	7.9-8.4	13-21	---	5-30
223B2:					
Varna----------------	0-7	5.6-7.3	14-20	---	0
	7-26	5.6-7.3	18-28	---	0
	26-38	7.4-8.4	15-25	---	0-15
	38-60	7.9-8.4	13-21	---	5-30
223C2:					
Varna----------------	0-9	5.6-7.3	14-20	---	0
	9-29	5.6-7.3	18-28	---	0
	29-50	7.4-8.4	15-25	---	0-15
	50-60	7.9-8.4	13-21	---	5-30
223C3:					
Varna----------------	0-6	5.6-7.3	14-22	---	0
	6-16	5.6-7.3	18-28	---	0
	16-19	7.4-8.4	15-25	---	0-15
	19-60	7.9-8.4	13-21	---	5-30
223D3:					
Varna----------------	0-8	5.6-7.8	18-25	---	0
	8-20	5.6-7.8	22-32	---	0-15
	20-60	6.6-8.4	17-25	---	5-30

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
224C2:					
Strawn---------------	0-8	5.6-7.3	9.7-15	---	0
	8-23	5.6-7.8	13-19	---	0
	23-60	7.4-8.4	10-16	---	5-30
224C3:					
Strawn---------------	0-8	5.6-7.8	14-19	---	0-5
	8-24	5.6-8.4	13-19	---	0-10
	24-60	7.4-8.4	10-16	---	5-30
224D2:					
Strawn---------------	0-9	5.6-7.3	9.7-15	---	0
	9-21	5.6-7.8	13-19	---	0
	21-60	7.4-8.4	10-16	---	5-30
224D3:					
Strawn---------------	0-8	5.6-7.3	14-19	---	0
	8-19	5.6-7.8	13-19	---	0-5
	19-60	7.4-8.4	10-16	---	5-30
224F2:					
Strawn---------------	0-5	5.6-7.3	9.7-15	---	0
	5-18	5.6-7.8	13-19	---	0
	18-60	7.4-8.4	10-16	---	5-30
228A:					
Nappanee-------------	0-5	5.1-7.3	12-20	---	0
	5-8	5.1-7.3	9.0-16	---	0
	8-26	5.6-7.8	23-32	---	0
	26-48	7.4-8.4	20-29	---	10-30
	48-75	7.9-8.4	15-24	---	15-35
228B:					
Nappanee-------------	0-4	5.1-7.3	12-20	---	0
	4-9	5.1-7.3	9.0-16	---	0
	9-23	5.6-7.8	23-32	---	0
	23-46	7.4-8.4	20-29	---	10-30
	46-60	7.9-8.4	15-24	---	15-35
232A:					
Ashkum---------------	0-12	5.6-7.3	22-38	---	0
	12-29	6.1-7.8	22-39	---	0-5
	29-54	6.6-7.8	13-24	---	0-15
	54-60	7.4-8.4	11-22	---	10-25
233A:					
Birkbeck-------------	0-8	5.1-7.3	11-28	---	0
	8-11	5.1-7.3	9.0-24	---	0
	11-46	5.1-7.3	16-29	---	0
	46-56	6.1-7.8	9.0-19	---	0-5
	56-60	7.4-8.4	8.0-16	---	15-25
234A:					
Sunbury--------------	0-8	5.6-7.3	18-29	---	0
	8-15	5.6-7.3	11-20	---	0
	15-36	5.6-7.3	22-35	---	0
	36-43	6.1-7.8	16-27	---	0
	43-47	6.1-7.8	8.0-18	---	0-10
	47-72	7.4-8.4	4.0-16	---	15-40

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
235A:					
Bryce----------------	0-13	5.6-7.8	30-42	---	0
	13-45	6.1-7.8	23-33	---	0-5
	45-58	7.4-8.4	21-33	---	0-15
	58-66	7.4-8.4	12-34	---	10-25
242A:					
Kendall--------------	0-7	5.1-7.3	10-26	---	0
	7-11	5.1-7.3	8.0-20	---	0
	11-51	4.5-7.3	13-18	13-17.5	0
	51-58	5.1-7.8	9.0-19	---	0-15
	58-80	7.4-8.4	3.0-10	---	0-20
243C2:					
St. Charles----------	0-8	5.1-7.8	14-22	---	0
	8-41	4.5-7.3	15-22	---	0
	41-60	5.1-7.3	9.0-19	---	0
293A:					
Andres---------------	0-11	5.6-7.3	10-22	---	0
	11-36	6.1-7.8	11-22	---	0-5
	36-50	6.6-8.4	13-24	---	0-15
	50-60	7.4-8.4	11-22	---	15-30
294B:					
Symerton-------------	0-15	5.6-7.3	10-22	---	0
	15-19	5.6-7.3	15-27	---	0
	19-35	5.6-7.8	8.0-22	---	0-5
	35-39	7.4-8.4	9.0-23	---	0-15
	39-60	7.4-8.4	9.0-23	---	5-30
294C2:					
Symerton-------------	0-8	5.6-7.3	9.0-20	---	0
	8-31	5.6-7.8	8.0-22	---	0-5
	31-40	7.4-8.4	9.0-23	---	0-15
	40-60	7.4-8.4	9.0-23	---	5-30
318C2:					
Lorenzo--------------	0-7	5.6-7.3	13-20	---	0
	7-16	5.6-7.8	10-20	---	0-35
	16-60	7.4-8.4	0.0-4.0	---	15-40
318D2:					
Lorenzo--------------	0-5	5.6-7.3	13-20	---	0
	5-15	5.6-7.8	10-20	---	15-35
	15-60	7.4-8.4	0.0-4.0	---	15-40
324B:					
Ripon----------------	0-12	5.1-7.3	16-22	---	0
	12-29	5.1-6.5	17-27	---	0
	29-35	6.1-8.4	17-27	---	0-20
	35-60	---	---	---	---
324C2:					
Ripon----------------	0-7	5.1-7.3	17-22	---	0
	7-24	5.1-6.5	17-27	---	0
	24-31	6.1-8.4	17-27	---	0-20
	31-60	---	---	---	---

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
325A:					
Dresden	0-9	5.6-7.3	13-22	---	0
	9-29	5.6-7.3	14-20	---	0
	29-33	5.6-7.8	10-16	---	0-15
	33-60	7.4-8.4	0.0-4.0	---	15-40
325B:					
Dresden	0-7	5.6-7.3	13-22	---	0
	7-16	5.6-7.3	14-20	---	0
	16-30	5.6-7.8	10-16	---	0-15
	30-60	7.4-8.4	0.0-4.0	---	15-40
327B:					
Fox	0-4	5.1-7.3	11-21	---	0
	4-7	5.1-7.3	9.0-17	---	0
	7-13	5.1-7.3	11-22	---	0
	13-28	5.6-7.8	10-22	---	0-30
	28-60	7.4-8.4	0.0-3.0	---	5-45
327C2:					
Fox	0-4	5.1-7.3	11-19	---	0
	4-12	5.1-7.3	11-22	---	0
	12-24	5.6-7.8	10-22	---	0-30
	24-60	7.4-8.4	0.0-3.0	---	5-45
330A:					
Peotone	0-13	5.6-7.8	30-38	---	0
	13-50	6.1-7.8	22-33	---	0
	50-60	6.6-8.4	15-26	---	0-15
356A:					
Elpaso	0-21	5.6-7.3	26-35	---	0
	21-44	6.1-7.8	14-25	---	0-5
	44-69	6.6-7.8	12-25	---	0-15
	69-80	7.4-8.4	9.0-20	---	5-30
369A:					
Waupecan	0-13	6.1-7.8	17-26	---	0
	13-38	5.6-7.3	16-23	---	0
	38-55	5.6-7.3	6.0-16	---	0
	55-70	6.6-8.4	0.0-8.0	---	0-30
369B:					
Waupecan	0-11	6.1-7.3	17-26	---	0
	11-39	5.6-7.3	16-23	---	0
	39-45	5.6-7.8	6.0-16	---	0-10
	45-60	7.4-8.4	0.0-8.0	---	0-30
442A:					
Mundelein	0-17	5.6-7.3	18-26	---	0
	17-31	5.6-7.8	16-25	---	0-10
	31-42	6.1-8.4	9.0-19	---	0-20
	42-60	7.4-8.4	3.0-15	---	5-30
443A:					
Barrington	0-13	5.6-7.3	18-26	---	0
	13-28	5.6-7.8	16-25	---	0-10
	28-44	6.1-8.4	9.0-19	---	0-20
	44-66	7.4-8.4	3.0-15	---	5-30

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
443B:					
Barrington-----------	0-11	5.6-7.3	18-26	---	0
	11-32	5.6-7.8	16-25	---	0-10
	32-42	6.1-8.4	9.0-19	---	0-20
	42-60	7.4-8.4	3.0-15	---	5-30
512A:					
Danabrook------------	0-19	5.6-7.3	19-26	---	0
	19-34	5.1-7.3	15-25	---	0
	34-53	5.6-7.8	12-21	---	0-20
	53-60	7.4-8.4	9.0-13	---	15-40
512B:					
Danabrook------------	0-13	5.6-7.3	19-26	---	0
	13-33	5.1-7.3	15-25	---	0
	33-50	5.6-7.8	12-21	---	0-20
	50-60	7.4-8.4	9.0-13	---	15-40
512C2:					
Danabrook------------	0-8	5.6-7.3	17-24	---	0
	8-27	5.1-7.3	15-25	---	0
	27-40	5.6-7.8	12-21	---	0-20
	40-65	7.4-8.4	9.0-13	---	15-40
541A:					
Graymont-------------	0-12	6.1-7.3	19-26	---	0
	12-21	5.6-7.3	15-25	---	0
	21-33	6.6-7.8	12-23	---	0-10
	33-60	7.4-8.4	13-20	---	5-30
541B:					
Graymont-------------	0-12	6.1-7.3	19-26	---	0
	12-33	5.6-7.3	15-25	---	0
	33-38	6.6-7.8	12-23	---	0-10
	38-60	7.4-8.4	13-20	---	5-30
541B2:					
Graymont-------------	0-8	6.1-7.3	19-24	---	0
	8-24	5.6-7.3	15-25	---	0
	24-35	6.6-7.8	13-25	---	0-10
	35-60	7.4-8.4	14-22	---	5-30
541C2:					
Graymont-------------	0-9	6.1-7.3	19-24	---	0
	9-30	5.6-7.3	15-25	---	0
	30-38	6.6-7.8	12-23	---	0-10
	38-60	7.4-8.4	13-20	---	5-30
614A:					
Chenoa---------------	0-12	6.1-7.3	27-40	---	0
	12-32	5.6-7.3	22-35	---	0
	32-36	6.6-8.4	13-24	---	0-15
	36-60	7.4-8.4	11-22	---	15-30
614B:					
Chenoa---------------	0-15	6.1-7.3	27-40	---	0
	15-28	5.6-7.3	22-35	---	0
	28-47	6.6-8.4	13-24	---	0-15
	47-60	7.4-8.4	11-22	---	15-30

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
663A:					
Clare----------------	0-11	5.6-7.8	17-26	---	0
	11-32	5.1-7.3	16-25	---	0
	32-61	5.6-7.8	11-21	---	0-5
	61-80	6.1-8.4	3.0-13	---	0-20
663B:					
Clare----------------	0-14	5.6-7.8	17-26	---	0
	14-36	5.1-7.3	16-25	---	0
	36-44	5.6-7.8	11-21	---	0-5
	44-60	6.1-8.4	6.0-16	---	0-20
667A:					
Kaneville------------	0-8	5.6-7.3	13-24	---	0
	8-42	5.6-7.8	17-22	---	0
	42-56	6.1-8.4	9.0-20	---	0-10
	56-80	6.1-8.4	6.0-18	---	0-20
667B:					
Kaneville------------	0-9	5.6-7.3	13-24	---	0
	9-44	5.6-7.8	17-22	---	0
	44-52	6.1-8.4	9.0-20	---	0-10
	52-80	6.1-8.4	6.0-18	---	0-20
668B:					
Somonauk-------------	0-9	5.1-7.3	10-22	---	0
	9-26	5.1-7.3	13-23	---	0
	26-55	5.1-7.8	9.0-20	---	0-5
	55-60	6.1-8.4	3.0-13	---	0-20
679A:					
Blackberry-----------	0-11	6.1-7.3	17-26	---	0
	11-52	5.1-7.3	15-23	---	0
	52-68	5.6-8.4	9.0-22	---	0-20
	68-80	5.6-8.4	3.0-19	---	0-20
679B:					
Blackberry-----------	0-16	6.1-7.3	17-26	---	0
	16-47	5.1-7.3	15-23	---	0
	47-62	5.6-8.4	9.0-22	---	0-10
	62-70	5.6-8.4	3.0-19	---	0-20
680A:					
Campton--------------	0-6	5.1-7.8	14-22	---	0
	6-50	4.5-7.3	15-23	---	0
	50-61	5.1-7.8	9.0-19	---	0-5
	61-73	5.1-7.8	3.0-16	---	0-20
680B:					
Campton--------------	0-8	5.1-7.8	14-22	---	0
	8-45	4.5-7.3	15-23	---	0
	45-51	5.1-7.8	9.0-19	---	0-5
	51-80	5.1-7.8	3.0-16	---	0-20
791A:					
Rush-----------------	0-4	5.1-7.3	9.0-22	---	0
	4-11	5.1-7.3	8.0-18	---	0
	11-38	4.5-6.5	15-23	---	0
	38-45	4.5-7.3	9.0-20	---	0
	45-60	7.4-8.4	1.0-5.0	---	10-35

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
791B:					
Rush	0-7	5.1-7.3	9.0-22	---	0
	7-11	5.1-7.3	8.0-18	---	0
	11-35	4.5-6.5	15-23	---	0
	35-46	4.5-7.3	9.0-20	---	0
	46-60	7.4-8.4	1.0-5.0	---	10-35
802B:					
Orthents, loamy	0-6	5.6-7.8	10-25	---	0-10
	6-60	5.6-8.4	10-20	---	0-20
820E:					
Hennepin	0-5	6.1-7.8	8.1-16	---	0-20
	5-18	6.1-8.4	9.1-16	---	0-40
	18-60	7.4-8.4	7.6-16	---	10-45
Casco	0-6	5.6-7.3	13-23	---	0
	6-20	5.6-7.8	14-27	---	0-3
	20-60	7.4-8.4	0.0-8.6	---	1-25
820G:					
Hennepin	0-5	6.1-7.8	8.1-16	---	0-20
	5-16	6.1-8.4	9.1-16	---	0-40
	16-60	7.4-8.4	7.6-16	---	10-45
Casco	0-7	5.6-7.3	13-23	---	0
	7-15	5.6-7.8	14-27	---	0-3
	15-60	7.4-8.4	0.0-8.6	---	1-25
864.					
Pits, quarry					
865.					
Pits, gravel					
969E2:					
Casco	0-5	5.6-7.3	8.0-19	---	0
	5-19	5.6-7.8	11-23	---	0-5
	19-60	7.4-8.4	0.0-4.0	---	1-25
Rodman	0-6	6.6-7.8	8.0-19	---	0-15
	6-10	6.6-7.8	2.0-17	---	0-25
	10-60	7.4-8.4	0.0-7.0	---	10-45
969F:					
Casco	0-4	5.6-7.3	8.0-21	---	0
	4-15	5.6-7.8	11-23	---	0-5
	15-60	7.4-8.4	0.0-4.0	---	1-25
Rodman	0-11	6.6-7.8	8.0-21	---	0-15
	11-14	6.6-7.8	2.0-17	---	0-25
	14-60	7.4-8.4	0.0-7.0	---	10-45
3082A:					
Millington	0-26	7.4-8.4	20-28	---	5-20
	26-53	7.4-8.4	14-27	---	5-30
	53-60	7.4-8.4	11-25	---	10-30
3107A:					
Sawmill	0-29	6.1-7.3	23-35	---	0
	29-48	6.6-7.8	18-30	---	0-5
	48-60	6.6-8.4	15-27	---	0-20

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Soil reaction	Cation-exchange capacity	Effective cation-exchange capacity	Calcium carbon-ate
	In	pH	meq/100 g	meq/100 g	Pct
8082A:					
Millington-----------	0-26	7.4-8.4	20-28	---	5-20
	26-36	7.4-8.4	14-27	---	5-30
	36-62	7.4-8.4	11-25	---	10-30
8304A:					
Landes---------------	0-16	5.6-7.8	6.0-17	---	0
	16-34	5.6-7.8	4.0-13	---	0-10
	34-62	5.6-8.4	2.0-10	---	0-20
8321A:					
Du Page--------------	0-30	6.6-8.4	17-26	---	0-15
	30-35	7.4-8.4	11-22	---	5-40
	35-60	7.4-8.4	4.0-17	---	5-40

Table 22.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
44A:										
Pella	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
59A:										
Lisbon	C	Jan-May	1.0-2.0	2.0-4.0	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
60B2:										
La Rose	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
60C2:										
La Rose	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
60C3:										
La Rose	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
67A:										
Harpster	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
69A:										
Milford	C/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
88D:										
Sparta	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
91A:										
Swygert	C	Jan-May	1.0-2.0	2.9-5.1	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
91B:										
Swygert	C	Jan-May	1.0-2.0	2.9-5.1	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
91B2:										
Swygert	C	Jan-May	1.0-2.0	2.9-5.1	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
91C2:										
Swygert	C	Jan-May	1.0-2.0	2.9-5.1	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
101A:										
Brenton	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
103A:										
Houghton	A/D	Jan-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
104A:										
Virgil	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
134C2:										
Camden	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
137A:										
Clare	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
137B:										
Clare	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
145A:										
Saybrook	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-3.8	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
145B:										
Saybrook	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-3.8	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
145B2:										
Saybrook	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-3.8	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
145C2:										
Saybrook	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-3.8	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
146B:										
Elliott	C	Jan-May	1.0-2.0	1.7-4.3	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
148A:										
Proctor	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
148B:										
Proctor	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
148C2:										
Proctor	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
149A:										
Brenton	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
152A:										
Drummer	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
154A:										
Flanagan	B	Jan-May	1.0-2.0	3.7-5.9	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
171A:										
Catlin	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	3.7-5.4	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
171B:										
Catlin	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	3.7-5.4	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
189A:										
Martinton	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
189B:										
Martinton	C	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
191A:										
Knight	C/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
192A:										
Del Rey	C	Jan-May	0.5-2.0	2.0-4.5	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
193A:										
Mayville	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
193B:										
Mayville	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
193C2:										
Mayville	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
198A:										
Elburn	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
199A:										
Plano	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
199B:										
Plano	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
199C2:										
Plano	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
206A:										
Thorp	C/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
210A:										
Lena	A/D	Jan-Jun	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	None
		Nov-Dec	0.0-1.0	>6.0	Apparent	0.0-1.0	Brief	Frequent	---	None
219A:										
Millbrook	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
223B:										
Varna	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-5.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
223B2:										
Varna	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-5.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
223C2:										
Varna	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-5.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
223C3:										
Varna	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-5.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
223D3:										
Varna	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-5.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
224C2:										
Strawn	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
224C3:										
Strawn	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
224D2:										
Strawn	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
224D3:										
Strawn	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
224F2:										
Strawn	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
228A:										
Nappanee	D	Jan-May	0.5-2.0	2.0-5.5	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
228B:										
Nappanee	D	Jan-May	0.5-2.0	2.0-5.5	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
232A:										
Ashkum	C/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
233A:										
Birkbeck	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	3.3-5.8	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
234A:										
Sunbury	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
235A:										
Bryce	D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
242A:										
Kendall	B	Jan-May	0.5-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
243C2:										
St. Charles	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
293A:										
Andres	C	Jan-May	1.0-2.0	3.0-5.5	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
294B:										
Symerton	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.5-4.7	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
294C2:										
Symerton	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.5-4.7	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
318C2:										
Lorenzo	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
318D2:										
Lorenzo	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
324B:										
Ripon	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
324C2:										
Ripon	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
325A:										
Dresden	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
325B:										
Dresden	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
327B:										
Fox	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
327C2:										
Fox	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
330A:										
Peotone	C/D	Jan-Jun	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jul-Dec	>6.0	>6.0	---	---	---	None	---	None
356A:										
Elpaso	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
369A:										
Waupecan	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
369B:										
Waupecan	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
442A:										
Mundelein	B	Jan-May	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
443A:										
Barrington	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
443B:										
Barrington	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
512A:										
Danabrook	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	3.0-5.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
512B:										
Danabrook	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	3.0-5.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
512C2:										
Danabrook	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	3.0-5.0	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
541A:										
Graymont	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.3	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
541B:										
Graymont	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.3	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
541B2:										
Graymont	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.3	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
541C2:										
Graymont	C	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	2.2-4.3	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
614A:										
Chenoa	C	Jan-May	1.0-2.0	2.1-4.3	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
614B:										
Chenoa	C	Jan-May	1.0-2.0	2.1-4.3	Perched	---	---	None	---	None
		Jun-Dec	>6.0	>6.0	---	---	---	None	---	None
663A:										
Clare	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
663B:										
Clare	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
667A:										
Kaneville	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
667B:										
Kaneville	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
668B:										
Somonauk	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
679A:										
Blackberry	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
679B:										
Blackberry	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
680A:										
Campton	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
680B:										
Campton	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
791A:										
Rush	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
791B:										
Rush------------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
802B:										
Orthents, loamy-------	B	Jan	>6.0	>6.0	---	---	---	None	---	None
		Feb-Apr	3.5-5.0	3.7-5.5	Perched	---	---	None	---	None
		May-Dec	>6.0	>6.0	---	---	---	None	---	None
820E:										
Hennepin--------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Casco-----------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
820G:										
Hennepin--------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Casco-----------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
864.										
Pits, quarry										
865.										
Pits, gravel										
969E2:										
Casco-----------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Rodman----------------	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
969F:										
Casco-----------------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Rodman----------------	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
3082A:										
Millington------------	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	None	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	None	Brief	Frequent
3107A:										
Sawmill---------------	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Frequent
		Jun	>6.0	>6.0	---	---	---	None	Brief	Frequent
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	None	Brief	Frequent
8082A:										
Millington------------	B/D	Jan-May	0.0-1.0	>6.0	Apparent	0.0-0.5	Brief	Frequent	Brief	Occasional
		Jun	>6.0	>6.0	---	---	---	None	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	None	Brief	Occasional
8304A:										
Landes----------------	B	Jan-Jun	>6.0	>6.0	---	---	---	None	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	None	Brief	Occasional

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft		Ft				
8321A:										
Du Page---------------	B	Jan	>6.0	>6.0	---	---	---	None	Brief	Occasional
		Feb-Apr	3.5-6.0	>6.0	Apparent	---	---	None	Brief	Occasional
		May-Jun	>6.0	>6.0	---	---	---	None	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	None
		Nov-Dec	>6.0	>6.0	---	---	---	None	Brief	Occasional

Table 23.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In		In	In			
44A:								
Pella	Lithic bedrock	40-60	Indurated	---	---	High	High	Low
59A:								
Lisbon	---	---	---	---	---	High	High	Moderate
60B2:								
La Rose	---	---	---	---	---	Moderate	Moderate	Low
60C2:								
La Rose	---	---	---	---	---	Moderate	Moderate	Low
60C3:								
La Rose	---	---	---	---	---	Moderate	Moderate	Low
67A:								
Harpster	---	---	---	---	---	High	High	Low
69A:								
Milford	---	---	---	---	---	High	High	Low
88D:								
Sparta	---	---	---	---	---	Low	Low	High
91A:								
Swygert	Dense material	35-55	Noncemented	---	---	Moderate	High	Low
91B:								
Swygert	Dense material	35-55	Noncemented	---	---	Moderate	High	Low
91B2:								
Swygert	Dense material	35-55	Noncemented	---	---	Moderate	High	Low
91C2:								
Swygert	Dense material	35-55	Noncemented	---	---	Moderate	High	Low
101A:								
Brenton	Lithic bedrock	40-60	Indurated	---	---	High	High	Moderate
103A:								
Houghton	---	---	---	6-18	55-60	High	High	High

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
104A:								
Virgil	---	---	---	---	---	High	High	Moderate
134C2:								
Camden	---	---	---	---	---	High	Moderate	Moderate
137A:								
Clare	Lithic bedrock	40-60	Indurated	---	---	High	High	Moderate
137B:								
Clare	Lithic bedrock	40-60	Indurated	---	---	High	High	Moderate
145A:								
Saybrook	---	---	---	---	---	High	High	Moderate
145B:								
Saybrook	---	---	---	---	---	High	High	Moderate
145B2:								
Saybrook	---	---	---	---	---	High	High	Moderate
145C2:								
Saybrook	---	---	---	---	---	High	High	Moderate
146B:								
Elliott	Dense material	20-45	Noncemented	---	---	Moderate	High	Low
148A:								
Proctor	---	---	---	---	---	High	Moderate	Moderate
148B:								
Proctor	---	---	---	---	---	High	Moderate	Moderate
148C2:								
Proctor	---	---	---	---	---	High	Moderate	Moderate
149A:								
Brenton	---	---	---	---	---	High	High	Moderate
152A:								
Drummer	---	---	---	---	---	High	High	Moderate
154A:								
Flanagan	---	---	---	---	---	High	High	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
171A:								
Catlin	---	---	---	---	---	High	High	Moderate
171B:								
Catlin	---	---	---	---	---	High	High	Moderate
189A:								
Martinton	---	---	---	---	---	Moderate	High	Moderate
189B:								
Martinton	---	---	---	---	---	Moderate	High	Moderate
191A:								
Knight	---	---	---	---	---	High	High	Moderate
192A:								
Del Rey	---	---	---	---	---	High	High	High
193A:								
Mayville	---	---	---	---	---	High	High	Moderate
193B:								
Mayville	---	---	---	---	---	High	High	Moderate
193C2:								
Mayville	---	---	---	---	---	High	High	Moderate
198A:								
Elburn	---	---	---	---	---	High	High	Moderate
199A:								
Plano	---	---	---	---	---	High	Moderate	Moderate
199B:								
Plano	---	---	---	---	---	High	Moderate	Moderate
199C2:								
Plano	---	---	---	---	---	High	Moderate	Moderate
206A:								
Thorp	---	---	---	---	---	High	High	Moderate
210A:								
Lena	---	---	---	6-18	55-60	High	High	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
219A:								
Millbrook	---	---	---	---	---	High	High	Moderate
223B:								
Varna	Dense material	24-60	Noncemented	---	---	Moderate	High	Moderate
223B2:								
Varna	Dense material	24-60	Noncemented	---	---	Moderate	High	Moderate
223C2:								
Varna	Dense material	24-60	Noncemented	---	---	Moderate	High	Moderate
223C3:								
Varna	Dense material	18-36	Noncemented	---	---	Moderate	High	Low
223D3:								
Varna	Dense material	18-36	Noncemented	---	---	Moderate	High	Low
224C2:								
Strawn	---	---	---	---	---	Moderate	Moderate	Low
224C3:								
Strawn	---	---	---	---	---	Moderate	Moderate	Low
224D2:								
Strawn	---	---	---	---	---	Moderate	Moderate	Low
224D3:								
Strawn	---	---	---	---	---	Moderate	Moderate	Low
224F2:								
Strawn	---	---	---	---	---	Moderate	Moderate	Low
228A:								
Nappanee	Dense material	24-60	Noncemented	---	---	High	High	Moderate
228B:								
Nappanee	Dense material	30-60	Noncemented	---	---	High	High	Low
232A:								
Ashkum	---	---	---	---	---	High	High	Low
233A:								
Birkbeck	---	---	---	---	---	High	High	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
234A:								
Sunbury	---	---	---	---	---	High	High	Moderate
235A:								
Bryce	---	---	---	---	---	High	High	Low
242A:								
Kendall	---	---	---	---	---	High	High	High
243C2:								
St. Charles	---	---	---	---	---	High	Moderate	High
293A:								
Andres	---	---	---	---	---	Moderate	High	Low
294B:								
Symerton	---	---	---	---	---	Moderate	High	Moderate
294C2:								
Symerton	---	---	---	---	---	Moderate	High	Moderate
318C2:								
Lorenzo	---	---	---	---	---	Moderate	Moderate	Low
318D2:								
Lorenzo	---	---	---	---	---	Moderate	Moderate	Low
324B:								
Ripon	Lithic bedrock	20-40	Indurated	---	---	High	Moderate	Low
324C2:								
Ripon	Lithic bedrock	20-40	Indurated	---	---	High	Moderate	Low
325A:								
Dresden	---	---	---	---	---	Moderate	Moderate	Moderate
325B:								
Dresden	---	---	---	---	---	Moderate	Moderate	Moderate
327B:								
Fox	---	---	---	---	---	Moderate	Moderate	Moderate
327C2:								
Fox	---	---	---	---	---	Moderate	Moderate	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness	Initial	Total		Uncoated steel	Concrete
		In		In	In			
330A:								
Peotone	---	---	---	---	---	High	High	Low
356A:								
Elpaso	---	---	---	---	---	High	High	Low
369A:								
Waupecan	---	---	---	---	---	High	Moderate	Moderate
369B:								
Waupecan	---	---	---	---	---	High	Moderate	Moderate
442A:								
Mundelein	---	---	---	---	---	High	High	Moderate
443A:								
Barrington	---	---	---	---	---	High	Moderate	Moderate
443B:								
Barrington	---	---	---	---	---	High	Moderate	Moderate
512A:								
Danabrook	---	---	---	---	---	High	High	Moderate
512B:								
Danabrook	---	---	---	---	---	High	High	Moderate
512C2:								
Danabrook	---	---	---	---	---	High	High	Moderate
541A:								
Graymont	---	---	---	---	---	High	High	Low
541B:								
Graymont	---	---	---	---	---	High	High	Moderate
541B2:								
Graymont	---	---	---	---	---	High	High	Moderate
541C2:								
Graymont	---	---	---	---	---	High	High	Moderate
614A:								
Chenoa	---	---	---	---	---	Moderate	High	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In		In	In			
614B:								
Chenoa	---	---	---	---	---	Moderate	High	Moderate
663A:								
Clare	---	---	---	---	---	High	High	Moderate
663B:								
Clare	---	---	---	---	---	High	High	Moderate
667A:								
Kaneville	---	---	---	---	---	High	High	Moderate
667B:								
Kaneville	---	---	---	---	---	High	High	Moderate
668B:								
Somonauk	---	---	---	---	---	High	High	Moderate
679A:								
Blackberry	---	---	---	---	---	High	High	Moderate
679B:								
Blackberry	---	---	---	---	---	High	High	Moderate
680A:								
Campton	---	---	---	---	---	High	High	High
680B:								
Campton	---	---	---	---	---	High	High	High
791A:								
Rush	---	---	---	---	---	High	Moderate	High
791B:								
Rush	---	---	---	---	---	High	Moderate	High
802B:								
Orthents, loamy	---	---	---	---	---	Moderate	Moderate	Moderate
820E:								
Hennepin	---	---	---	---	---	Moderate	Low	Low
Casco	---	---	---	---	---	Moderate	Moderate	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In		In	In			
820G:								
Hennepin	---	---	---	---	---	Moderate	Low	Low
Casco	---	---	---	---	---	Moderate	Moderate	Low
864. Pits, quarry								
865. Pits, gravel								
969E2:								
Casco	---	---	---	---	---	Moderate	Moderate	Low
Rodman	---	---	---	---	---	Low	Low	Low
969F:								
Casco	---	---	---	---	---	Moderate	Moderate	Low
Rodman	---	---	---	---	---	Low	Low	Low
3082A:								
Millington	---	---	---	---	---	High	High	Low
3107A:								
Sawmill	---	---	---	---	---	High	High	Low
8082A:								
Millington	---	---	---	---	---	High	High	Low
8304A:								
Landes	---	---	---	---	---	Moderate	Low	Moderate
8321A:								
Du Page	---	---	---	---	---	Moderate	Low	Low

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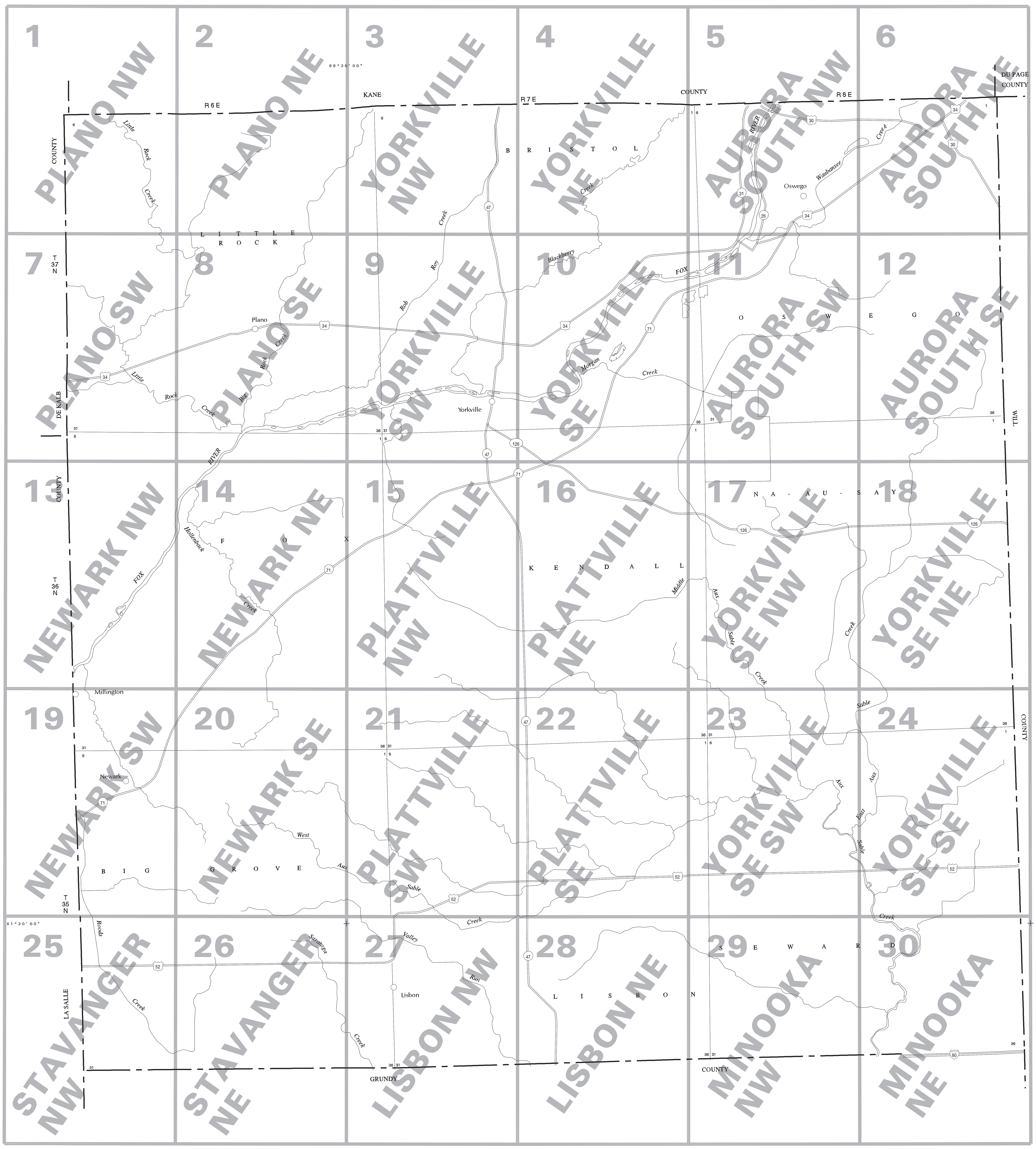

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

INDEX TO MAP SHEETS
KENDALL COUNTY, ILLINOIS

MILES

KILOMETERS

SCALE = 1:70000

SOIL LEGEND

Map unit symbols consist of a combination of numbers and letters. The initial numbers represent the kind of soil or miscellaneous area. An uppercase letter following these numbers indicates the class of slope. A final number of 2 following the slope class letter indicates that the soil is moderately eroded, and a final number of 3 indicates that the soil is severely eroded. Symbols that do not have a final number of 2 or 3 following a slope class letter indicate map units that are not eroded or are only slightly eroded. Symbols for miscellaneous areas do not have a slope class letter.

SYMBOL	NAME
44A	Pella silty clay loam, 0 to 2 percent slopes, bedrock substratum
59A	Lisbon silt loam, 0 to 2 percent slopes
60B2	La Rose silt loam, 2 to 5 percent slopes, eroded
60C2	La Rose silt loam, 5 to 10 percent slopes, eroded
60C3	La Rose clay loam, 5 to 10 percent slopes, severely eroded
67A	Harpster silty clay loam, 0 to 2 percent slopes
69A	Milford silty clay loam, 0 to 2 percent slopes
88D	Sparta loamy sand, 6 to 12 percent slopes
91A	Swygert silty clay loam, 0 to 2 percent slopes
91B	Swygert silty clay loam, 2 to 4 percent slopes
91B2	Swygert silty clay loam, 2 to 4 percent slopes, eroded
91C2	Swygert silty clay loam, 4 to 6 percent slopes, eroded
101A	Brenton silt loam, 0 to 2 percent slopes, bedrock substratum
103A	Houghton muck, 0 to 2 percent slopes
104A	Virgil silt loam, 0 to 2 percent slopes
134C2	Camden silt loam, 5 to 10 percent slopes, eroded
137A	Clare silt loam, 0 to 2 percent slopes, bedrock substratum
137B	Clare silt loam, 2 to 5 percent slopes, bedrock substratum
145A	Saybrook silt loam, 0 to 2 percent slopes
145B	Saybrook silt loam, 2 to 5 percent slopes
145B2	Saybrook silt loam, 2 to 5 percent slopes, eroded
145C2	Saybrook silt loam, 5 to 10 percent slopes, eroded
146B	Elliott silt loam, 2 to 4 percent slopes
148A	Proctor silt loam, 0 to 2 percent slopes
148B	Proctor silt loam, 2 to 5 percent slopes
148C2	Proctor silt loam, 5 to 10 percent slopes, eroded
149A	Brenton silt loam, 0 to 2 percent slopes
152A	Drummer silty clay loam, 0 to 2 percent slopes
154A	Flanagan silt loam, 0 to 2 percent slopes
171A	Catlin silt loam, 0 to 2 percent slopes
171B	Catlin silt loam, 2 to 5 percent slopes
189A	Martinton silt loam, 0 to 2 percent slopes
189B	Martinton silt loam, 2 to 4 percent slopes
191A	Knight silt loam, 0 to 2 percent slopes
192A	Del Rey silt loam, 0 to 2 percent slopes
193A	Mayville silt loam, 0 to 2 percent slopes
193B	Mayville silt loam, 2 to 5 percent slopes
193C2	Mayville silt loam, 5 to 10 percent slopes, eroded
198A	Elburn silt loam, 0 to 2 percent slopes
199A	Plano silt loam, 0 to 2 percent slopes
199B	Plano silt loam, 2 to 5 percent slopes
199C2	Plano silt loam, 5 to 10 percent slopes, eroded
206A	Thorp silt loam, 0 to 2 percent slopes
210A	Lena muck, 0 to 2 percent slopes
219A	Millbrook silt loam, 0 to 2 percent slopes
223B	Varna silt loam, 2 to 4 percent slopes
223B2	Varna silt loam, 2 to 4 percent slopes, eroded
223C2	Varna silt loam, 4 to 6 percent slopes, eroded
223C3	Varna silty clay loam, 4 to 6 percent slopes, severely eroded
223D3	Varna silty clay loam, 6 to 12 percent slopes, severely eroded
224C2	Strawn silt loam, 5 to 10 percent slopes, eroded
224C3	Strawn clay loam, 5 to 10 percent slopes, severely eroded
224D2	Strawn silt loam, 10 to 18 percent slopes, eroded
224D3	Strawn clay loam, 10 to 18 percent slopes, severely eroded
224F2	Strawn silt loam, 18 to 35 percent slopes, eroded
228A	Nappanee silt loam, 0 to 2 percent slopes
228B	Nappanee silt loam, 2 to 4 percent slopes
232A	Ashkum silty clay loam, 0 to 2 percent slopes

SYMBOL	NAME
233A	Birkbeck silt loam, 0 to 2 percent slopes
234A	Sunbury silt loam, 0 to 2 percent slopes
235A	Bryce silty clay, 0 to 2 percent slopes
242A	Kendall silt loam, 0 to 2 percent slopes
243C2	St. Charles silt loam, 5 to 10 percent slopes, eroded
293A	Andres silt loam, 0 to 2 percent slopes
294B	Symerton silt loam, 2 to 5 percent slopes
294C2	Symerton silt loam, 5 to 10 percent slopes, eroded
318C2	Lorenzo loam, 4 to 6 percent slopes, eroded
318D2	Lorenzo loam, 6 to 12 percent slopes, eroded
324B	Ripon silt loam, 2 to 5 percent slopes
324C2	Ripon silt loam, 5 to 10 percent slopes, eroded
325A	Dresden silt loam, 0 to 2 percent slopes
325B	Dresden silt loam, 2 to 4 percent slopes
327B	Fox silt loam, 2 to 4 percent slopes
327C2	Fox silt loam, 4 to 6 percent slopes, eroded
330A	Peotone silty clay loam, 0 to 2 percent slopes
356A	Elpaso silty clay loam, 0 to 2 percent slopes
369A	Waupecan silt loam, 0 to 2 percent slopes
369B	Waupecan silt loam, 2 to 4 percent slopes
442A	Mundelein silt loam, 0 to 2 percent slopes
443A	Barrington silt loam, 0 to 2 percent slopes
443B	Barrington silt loam, 2 to 4 percent slopes
512A	Danabrook silt loam, 0 to 2 percent slopes
512B	Danabrook silt loam, 2 to 5 percent slopes
512C2	Danabrook silt loam, 5 to 10 percent slopes, eroded
541A	Graymont silt loam, 0 to 2 percent slopes
541B	Graymont silt loam, 2 to 5 percent slopes
541B2	Graymont silt loam, 2 to 5 percent slopes, eroded
541C2	Graymont silt loam, 5 to 10 percent slopes, eroded
614A	Chenoa silty clay loam, 0 to 2 percent slopes
614B	Chenoa silty clay loam, 2 to 5 percent slopes
663A	Clare silt loam, 0 to 2 percent slopes
663B	Clare silt loam, 2 to 5 percent slopes
667A	Kaneville silt loam, 0 to 2 percent slopes
667B	Kaneville silt loam, 2 to 5 percent slopes
668B	Somonauk silt loam, 2 to 5 percent slopes
679A	Blackberry silt loam, 0 to 2 percent slopes
679B	Blackberry silt loam, 2 to 5 percent slopes
680A	Campton silt loam, 0 to 2 percent slopes
680B	Campton silt loam, 2 to 5 percent slopes
791A	Rush silt loam, 0 to 2 percent slopes
791B	Rush silt loam, 2 to 4 percent slopes
802B	Orthents, loamy, undulating
820E	Hennepin-Casco complex, 12 to 30 percent slopes
820G	Hennepin-Casco complex, 30 to 60 percent slopes
864	Pits, quarry
865	Pits, gravel
969E2	Casco-Rodman complex, 12 to 20 percent slopes, eroded
969F	Casco-Rodman complex, 20 to 30 percent slopes
3082A	Millington silt loam, 0 to 2 percent slopes, frequently flooded
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded
8304A	Landes fine sandy loam, 0 to 2 percent slopes, occasionally flooded
8321A	Du Page silt loam, 0 to 2 percent slopes, occasionally flooded
MW	Miscellaneous water
W	Water

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access area
- Field sheet matchline & neatline
- Previously Published Survey

OTHER BOUNDARY (label)

- Airport, airfield
- Cemetery
- City/county park

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNER
(section and land grants)

GEOGRAPHIC COORDINATE TICK

TRANSPORTATION

- Divided roads
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS

- Interstate — 173 — 79 345
- Federal — 287 — 410 224
- State — 52 — 52 347
- County, farm or ranch — 1283

RAILROAD

POWER TRANSMISSION LINE

PIPELINE

FENCE

LEVEES

- Without road
- With road
- With railroad
- Single side slope (showing actual feature location)

DAMS

- Medium or Small

LANDFORM FEATURES

- Prominent hill or peak
- Soil Sample Site

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Other Religion (label) — Mt Carmel
- Located object (label) — Ranger Station
- Tank (label) — Petroleum
- Lookout Tower
- Oil and/or Natural Gas Wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS

- Perennial, double line
- Perennial, single line — Label only
- Intermittent — Label only
- Drainage end — Label only

DRAINAGE AND IRRIGATION

- Double-line canal (label) — CANAL
- Perennial drainage and/or irrigation ditch — Label only
- Intermittent drainage and/ or irrigation ditch — Label only

SMALL LAKES, PONDS AND RESERVOIRS

- Perennial water
- Miscellaneous water
- Flood pool line — FLOOD POOL LINE

MISCELLANEOUS WATER FEATURES

- Spring
- Well, artesian
- Well, irrigation

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS — 44A 101A

LANDFORM FEATURES

ESCARPMENTS

- Bedrock
- Other than bedrock
- Short steep slope
- Gully
- Depression, closed
- Sinkhole

EXCAVATIONS

PITS

- Borrow pits
- Gravel pit
- Mine or quarry
- Landfill

MISCELLANEOUS SURFACE FEATURES

- Blowout
- Clay spot
- Gravelly spot
- Lava flow
- Marsh or swamp
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Very stony spot
- Wet spot

AD HOC FEATURES

- Calcareous spot
- Disturbed soil spot
- Gray spot
- Muck spot

Descriptions of Special Features

Name	Description	Label
Blowout	A small saucer-, cup-, or trough-shaped hollow or depression formed by wind erosion on a preexisting sand deposit. Typically 0.2 acre to 2.0 acres.	BLO
Borrow pit	An open excavation from which soil and underlying material have been removed, usually for construction purposes. Typically 0.2 acre to 2.0 acres.	BPI
Calcareous spot	An area in which the soil contains carbonates in the surface layer. The surface layer of the named soils in the surrounding map unit is noncalcareous. Typically 0.5 acre to 2.0 acres.	CSP
Clay spot	A spot where the surface layer is silty clay or clay in areas where the surface layer of the soils in the surrounding map unit is sandy loam, loam, silt loam, or coarser. Typically 0.2 acre to 2.0 acres.	CLA
Depression, closed	A shallow, saucer-shaped area that is slightly lower on the landscape than the surrounding area and that does not have a natural outlet for surface drainage. Typically 0.2 acre to 2.0 acres.	DEP
Disturbed soil spot	An area in which the soil has been removed and materials redeposited as a result of human activity. Typically 0.25 acre to 2.0 acres.	DSS
Dumps	Areas of nonsoil material that support little or no vegetation. Typically 0.5 acre to 2.0 acres.	DMP
Escarpment, bedrock	A relatively continuous and steep slope or cliff, produced by erosion or faulting, that breaks the general continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.	ESB
Escarpment, nonbedrock	A relatively continuous and steep slope or cliff, generally produced by erosion but in some places produced by faulting, that breaks the continuity of more gently sloping land surfaces. Exposed earthy material is nonsoil or very shallow soil.	ESO
Glacial till spot	An exposure of glacial till at the surface of the earth. Typically 0.25 acre to 2.0 acres.	GLA
Gravel pit	An open excavation from which soil and underlying material have been removed and used, without crushing, as a source of sand or gravel. Typically 0.2 acre to 2.0 acres.	GPI
Gravelly spot	A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area that has less than 15 percent rock fragments. Typically 0.2 acre to 2.0 acres.	GRA

Name	Description	Label
Gray spot	A spot in which the surface layer is gray in areas where the subsurface layer of the named soils in the surrounding map unit are darker. Typically 0.25 acre to 2.0 acres.	GSP
Gully	A small channel with steep sides cut by running water through which water ordinarily runs only after a rain or after melting of snow or ice. It generally is an obstacle to wheeled vehicles and is too deep to be obliterated by ordinary tillage.	GUL
Iron bog	An accumulation of iron in the form of nodules, concretions, or soft masses on the surface or near the surface of soils. Typically 0.2 acre to 2.0 acres.	BFE
Landfill	An area of accumulated waste products of human habitation, either above or below natural ground level. Typically 0.2 acre to 2.0 acres.	LDF
Levee	An embankment that confines or controls water, especially one built along the banks of a river to prevent overflow onto lowlands.	LVS
Marsh or swamp	A water-saturated, very poorly drained area that is intermittently or permanently covered by water. Sedges, cattails, and rushes are the dominant vegetation in marshes, and trees or shrubs are the dominant vegetation in swamps. Typically 0.2 acre to 2.0 acres.	MAR
Mine or quarry	An open excavation from which soil and underlying material have been removed and in which bedrock is exposed. Also denotes surface openings to underground mines. Typically 0.2 acre to 2.0 acres.	MPI
Mine subsided area	An area that is lower than the soils in the surrounding map unit because of subsurface coal mining. Typically 0.25 acre to 3.0 acres.	MSA
Miscellaneous water	A small, constructed body of water that is used for industrial, sanitary, or mining applications and that contains water most of the year. Typically 0.2 acre to 2.0 acres.	MIS
Muck spot	An area that occurs within an area of poorly drained or very poorly drained soil and that has a histic epipedon or an organic surface layer. The symbol is used only in map units consisting of mineral soil. Typically 0.2 acre to 2.0 acres.	MUC
Oil brine spot	An area of soil that has been severely damaged by the accumulation of oil brine, with or without liquid oily wastes. The area is typically barren but may have a vegetative cover of salt-tolerant plants. Typically 0.2 acre to 2.0 acres.	OBS
Perennial water	A small, natural or constructed lake, pond, or pit that contains water most of the year. Typically 0.2 acre to 2.0 acres.	WAT

Name	Description	Label
Rock outcrop	An exposure of bedrock at the surface of the earth. Not used where the named soils of the surrounding map unit are shallow over bedrock or where “Rock outcrop” is a named component of the map unit. Typically 0.2 acre to 2.0 acres.	ROC
Saline spot	An area where the surface layer has an electrical conductivity of 8 mmhos/cm-l more than the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has an electrical conductivity of 2 mmhos/cm-l or less. Typically 0.2 acre to 2.0 acres.	SAL
Sandy spot	A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils in the surrounding map unit is very fine sandy loam or finer. Typically 0.2 acre to 2.0 acres.	SAN
Severely eroded spot	An area where, on the average, 75 percent or more of the original surface layer has been lost because of accelerated erosion. Not used in map units in which “severely eroded,” “very severely eroded,” or “gullied” is part of the map unit name. Typically 0.2 acre to 2.0 acres.	ERO
Short steep slope	A narrow area of soil having slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.	SLP
Sinkhole	A closed depression formed either by solution of the surficial rock or by collapse of underlying caves. Typically 0.2 acre to 2.0 acres.	SNK
Slide or slip	A prominent landform scar or ridge caused by fairly recent mass movement or descent of earthy material resulting from failure of earth or rock under shear stress along one or several surfaces. Typically 0.2 acre to 2.0 acres.	SLI
Sodic spot	An area where the surface layer has a sodium adsorption ratio that is at least 10 more than that of the surface layer of the named soils in the surrounding map unit. The surface layer of the surrounding soils has a sodium adsorption ratio of 5 or less. Typically 0.2 acre to 2.0 acres.	SOD
Spoil area	A pile of earthy materials, either smoothed or uneven, resulting from human activity. Typically 0.2 acre to 2.0 acres.	SPO
Stony spot	A spot where 0.01 to 0.1 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surrounding soil has no surface stones. Typically 0.2 acre to 2.0 acres.	STN
Unclassified water	A small, natural or manmade lake, pond, or pit that contains water, of an unspecified nature, most of the year. Typically 0.2 acre to 2.0 acres.	UWT

Name	Description	Label
Very stony spot	A spot where 0.1 to 3.0 percent of the surface cover is rock fragments that are more than 10 inches in diameter in areas where the surface cover of the surrounding soil is less than 0.01 percent stones. Typically 0.2 acre to 2.0 acres.	STV
Wet depression	A shallow, concave area within an area of poorly drained or very poorly drained soils in which water is ponded for intermittent periods. The concave area is saturated for appreciably longer periods of time than the surrounding soil. Typically 0.2 acre to 2.0 acres.	WDP
Wet spot	A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit. Typically 0.2 acres to 2.0 acres.	WET

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
PLANO NW QUADRANGLE
SHEET NUMBER 1 OF 30

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 3.75 MAPS

2 PLANO NE
7 PLANO SW
8 PLANO SE

PLANO NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 1 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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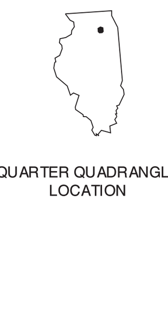
NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1		3
7	8	9

1 PLANO NW
3 YORKVILLE NW
7 PLANO SW
8 PLANO SE
9 YORKVILLE SW

INDEX TO ADJOINING 3.75 MAPS

PLANO NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 2 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

2		4
8	9	10

2 PLANO NE
4 YORKVILLE NE
8 PLANO SE
9 YORKVILLE SW
10 YORKVILLE SE

INDEX TO ADJOINING 3.75 MAPS

YORKVILLE NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 3 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

3		5
9	10	11

3 YORKVILLE NW
5 AURORA SOUTH NW
9 YORKVILLE SW
10 YORKVILLE SE
11 AURORA SOUTH SW

INDEX TO ADJOINING 3.75 MAPS

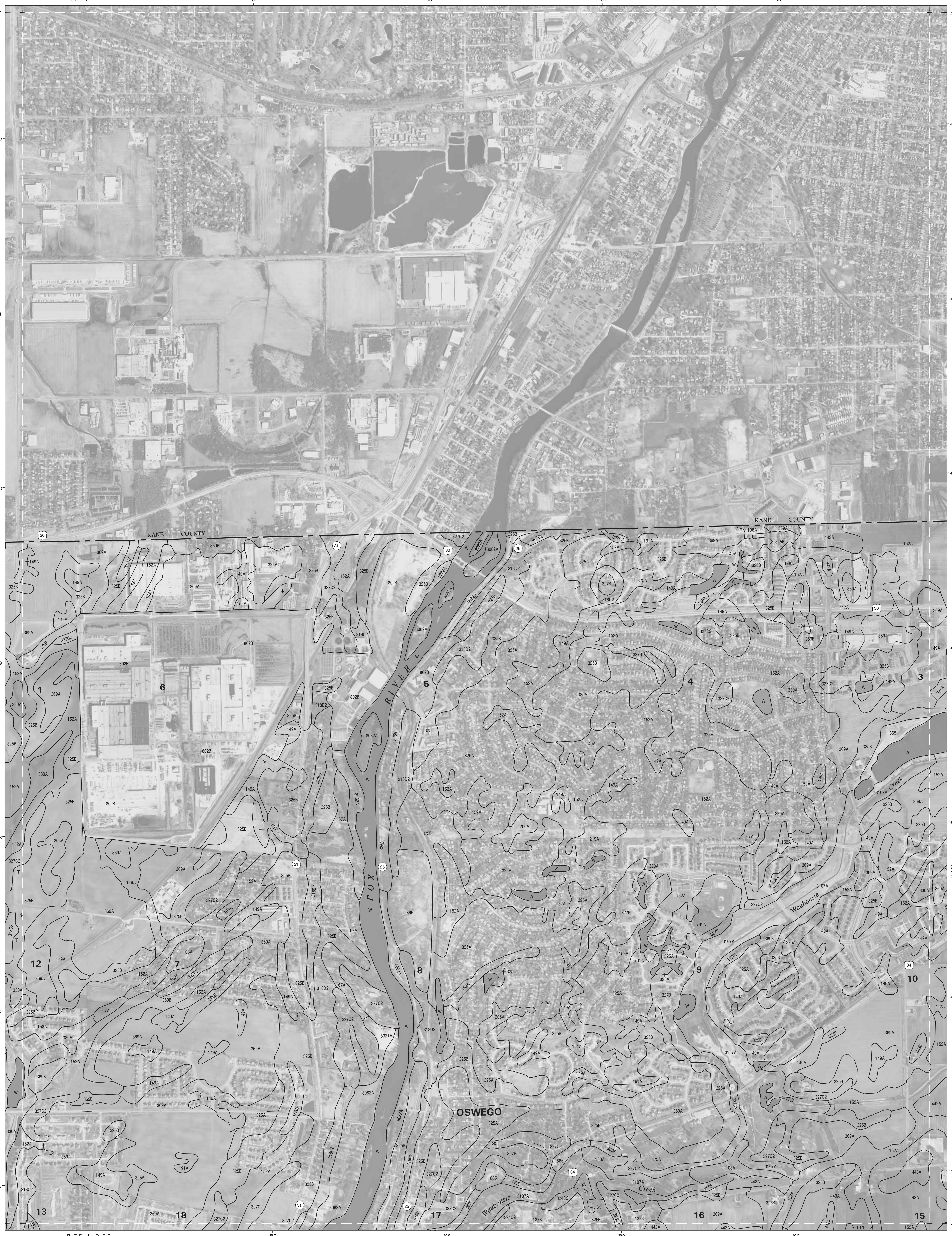
YORKVILLE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 4 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
AURORA SOUTH NW QUADRANGLE
SHEET NUMBER 5 OF 30

88° 22′30″ | 88°18′45″
41° 45′00″



41° 41′15″
88° 22′30″ R. 7 E. | R. 8 E. | 88°18′45″

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1000-meter ticks: Universal Transverse Mercator, zone 16.
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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

4		6
10	11	12

4 YORKVILLE NE
6 AURORA SOUTH NE
10 YORKVILLE SE
11 AURORA SOUTH SW
12 AURORA SOUTH SE

INDEX TO ADJOINING 3.75 MAPS

AURORA SOUTH NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 5 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

88° 18′ 45″ — 88° 15′ 00″
41° 45′ 00″

41° 41′ 15″ — 41° 41′ 15″
88° 18′ 45″ — R. 8 E. — 88° 15′ 00″

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North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

5	■	
11	12	

5 AURORA SOUTH NW
11 AURORA SOUTH SW
12 AURORA SOUTH SE

INDEX TO ADJOINING 3.75 MAPS

AURORA SOUTH NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 6 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

1	2	
	■	8
13	14	

1 PLANO NW
2 PLANO NE
8 PLANO SE
13 NEWARK NW
14 NEWARK NE

INDEX TO ADJOINING 3.75 MAPS

PLANO SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 7 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
PLANO SE QUADRANGLE
SHEET NUMBER 8 OF 30

88° 33′45″ | R. 6 E. | 88° 30′00″

41° 41′15″

41° 37′30″

88° 33′45″ | 88° 30′00″

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5 MILES

500 0 500 1000 1500 2000 2500 3000 3500 FEET

0.5 0 0.5 KILOMETERS

1	2	3
7		9
13	14	15

1 PLANO NW
2 PLANO NE
3 YORKVILLE NW
7 PLANO SW
9 YORKVILLE SW
13 NEWARK NW
14 NEWARK NE
15 PLATTVILLE NW

INDEX TO ADJOINING 3.75 MAPS

PLANO SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 8 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

88° 30′00″ R. 6 E. | R. 7 E. 88° 26′15″

41° 41′15″

41° 37′30″

88° 30′00″ 88° 26′15″

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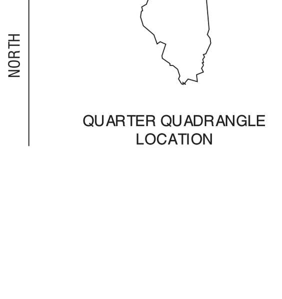
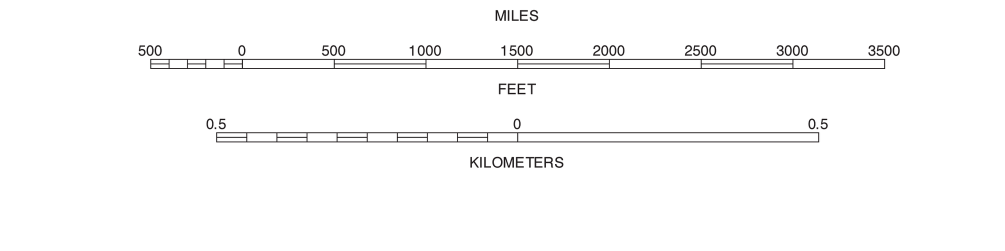
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



2	3	4
8		10
14	15	16

2 PLANO NE
3 YORKVILLE NW
4 YORKVILLE NE
8 PLANO SE
10 YORKVILLE SE
14 NEWARK NE
15 PLATTVILLE NW
16 PLATTVILLE NE

INDEX TO ADJOINING 3.75 MAPS

YORKVILLE SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 9 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
YORKVILLE SE QUADRANGLE
SHEET NUMBER 10 OF 30

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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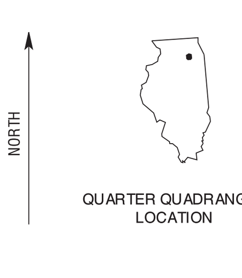
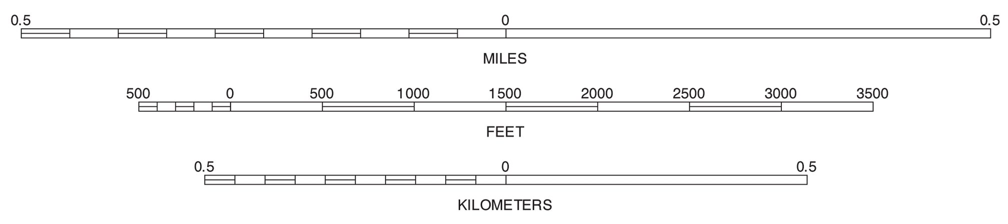
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



3	4	5
9		11
15	16	17

3 YORKVILLE NW
4 YORKVILLE NE
5 AURORA SOUTH NW
9 YORKVILLE SW
11 AURORA SOUTH SW
15 PLATTVILLE NW
16 PLATTVILLE NE
17 YORKVILLE SE NW

INDEX TO ADJOINING 3.75 MAPS

YORKVILLE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 10 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

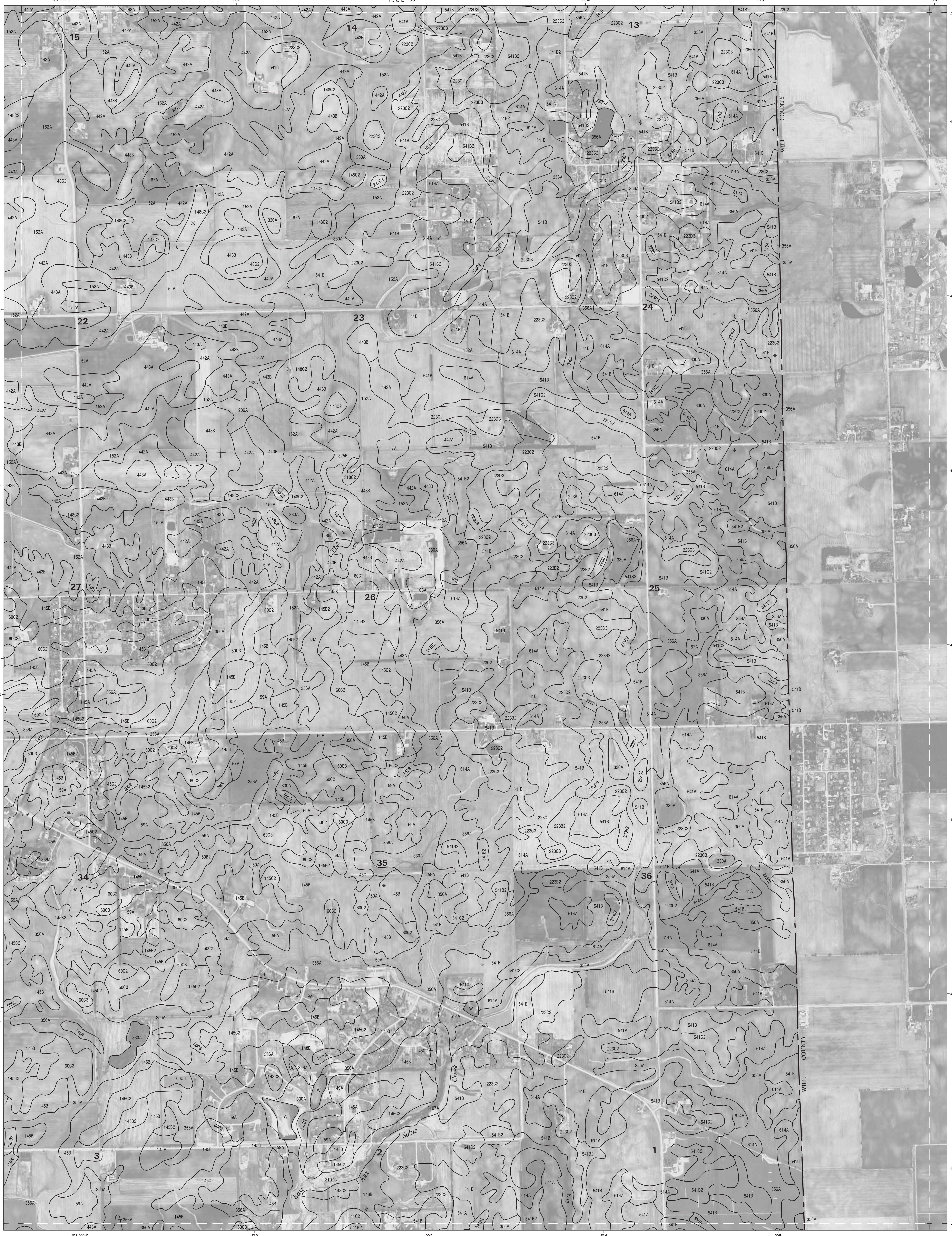
4	5	6
10		12
16	17	18

4 YORKVILLE NE
5 AURORA SOUTH NW
6 AURORA SOUTH NE
10 YORKVILLE SE
12 AURORA SOUTH SE
16 PLATTVILLE NE
17 YORKVILLE SE NW
18 YORKVILLE SE NE

INDEX TO ADJOINING 3.75 MAPS

AURORA SOUTH SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 11 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



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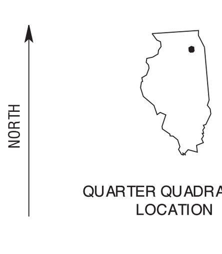
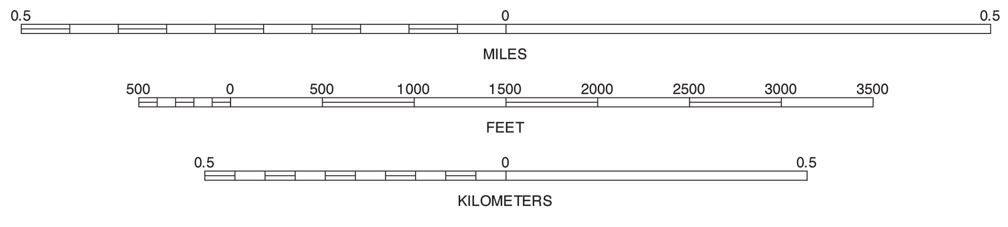
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



5	6	
11		
17	18	

5 AURORA SOUTH NW
6 AURORA SOUTH NE
11 AURORA SOUTH SW
17 YORKVILLE SE NW
18 YORKVILLE SE NE

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AURORA SOUTH SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 12 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
NEWARK NW QUADRANGLE
SHEET NUMBER 13 OF 30

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES
FEET
KILOMETERS

INDEX TO ADJOINING 3.75 MAPS
7 PLANO SW
8 PLANO SE
14 NEWARK NE
19 NEWARK SW
20 NEWARK SE

NEWARK NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 13 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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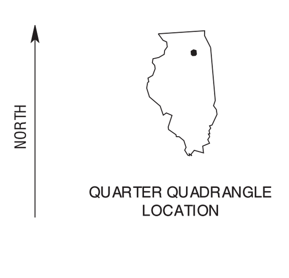
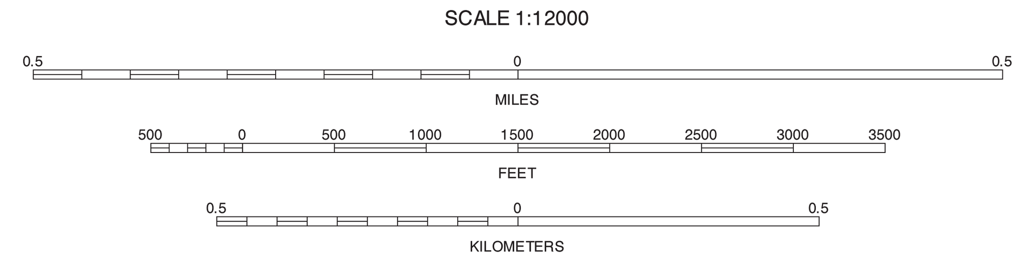
North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION



7	8	9
13		15
19	20	21

7 PLANO SW
8 PLANO SE
9 YORKVILLE SW
13 NEWARK NW
15 PLATTVILLE NW
19 NEWARK SW
20 NEWARK SE
21 PLATTVILLE SW

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NEWARK NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 14 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

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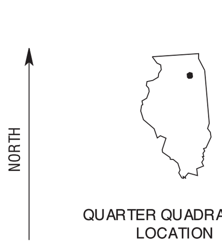
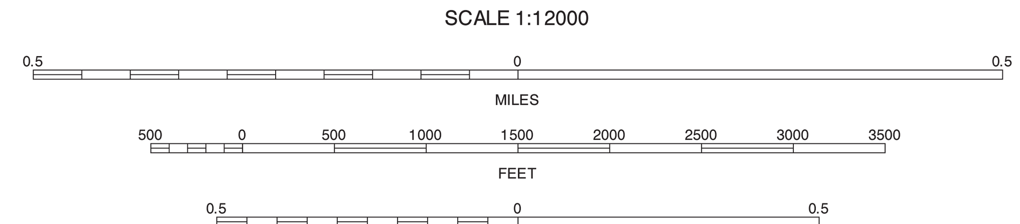
North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



8	9	10
14		16
20	21	22

8 PLANO SE
9 YORKVILLE SW
10 YORKVILLE SE
14 NEWARK NE
16 PLATTVILLE NE
20 NEWARK SE
21 PLATTVILLE SW
22 PLATTVILLE SE

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PLATTVILLE NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 15 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
PLATTVILLE NE QUADRANGLE
SHEET NUMBER 16 OF 30

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

9	10	11
15		17
21	22	23

9 YORKVILLE SW
10 YORKVILLE SE
11 AURORA SOUTH SW
15 PLATTVILLE NW
17 YORKVILLE SE NW
21 PLATTVILLE SW
22 PLATTVILLE SE
23 YORKVILLE SE SW

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PLATTVILLE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 16 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
YORKVILLE SE NW QUADRANGLE
SHEET NUMBER 17 OF 30

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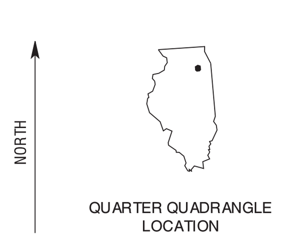
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



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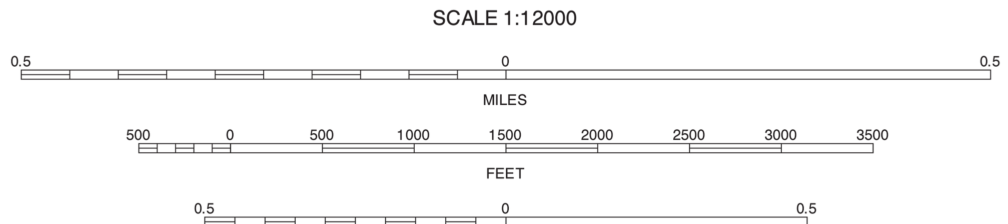

10	11	12
16		18
22	23	24

10 YORKVILLE SE
11 AURORA SOUTH SW
12 AURORA SOUTH SE
16 PLATTVILLE NE
18 YORKVILLE SE NE
22 PLATTVILLE SE
23 YORKVILLE SE SW
24 YORKVILLE SE SE

INDEX TO ADJOINING 3.75 MAPS

YORKVILLE SE NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 17 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
YORKVILLE SE NE QUADRANGLE
SHEET NUMBER 18 OF 30

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
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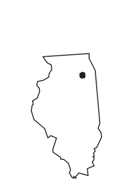
North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

11	12	
17	■	
23	24	

11 AURORA SOUTH SW
12 AURORA SOUTH SE
17 YORKVILLE SE NW
23 YORKVILLE SE SW
24 YORKVILLE SE SE

INDEX TO ADJOINING 3.75 MAPS

YORKVILLE SE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 18 OF 30

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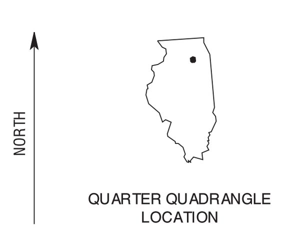
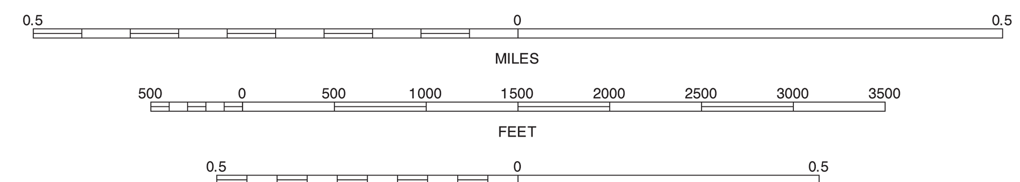
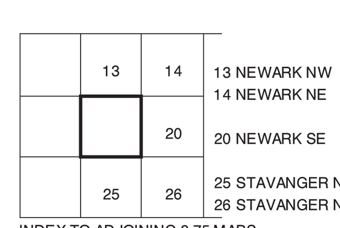
North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE
LOCATION

SCALE 1:12000





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NEWARK SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 19 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
NEWARK SE QUADRANGLE
SHEET NUMBER 20 OF 30

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

13	14	15
19		21
25	26	27

13 NEWARK NW
14 NEWARK NE
15 PLATTVILLE NW
19 NEWARK SW
21 PLATTVILLE SW
25 STAVANGER NW
26 STAVANGER NE
27 LISBON NW

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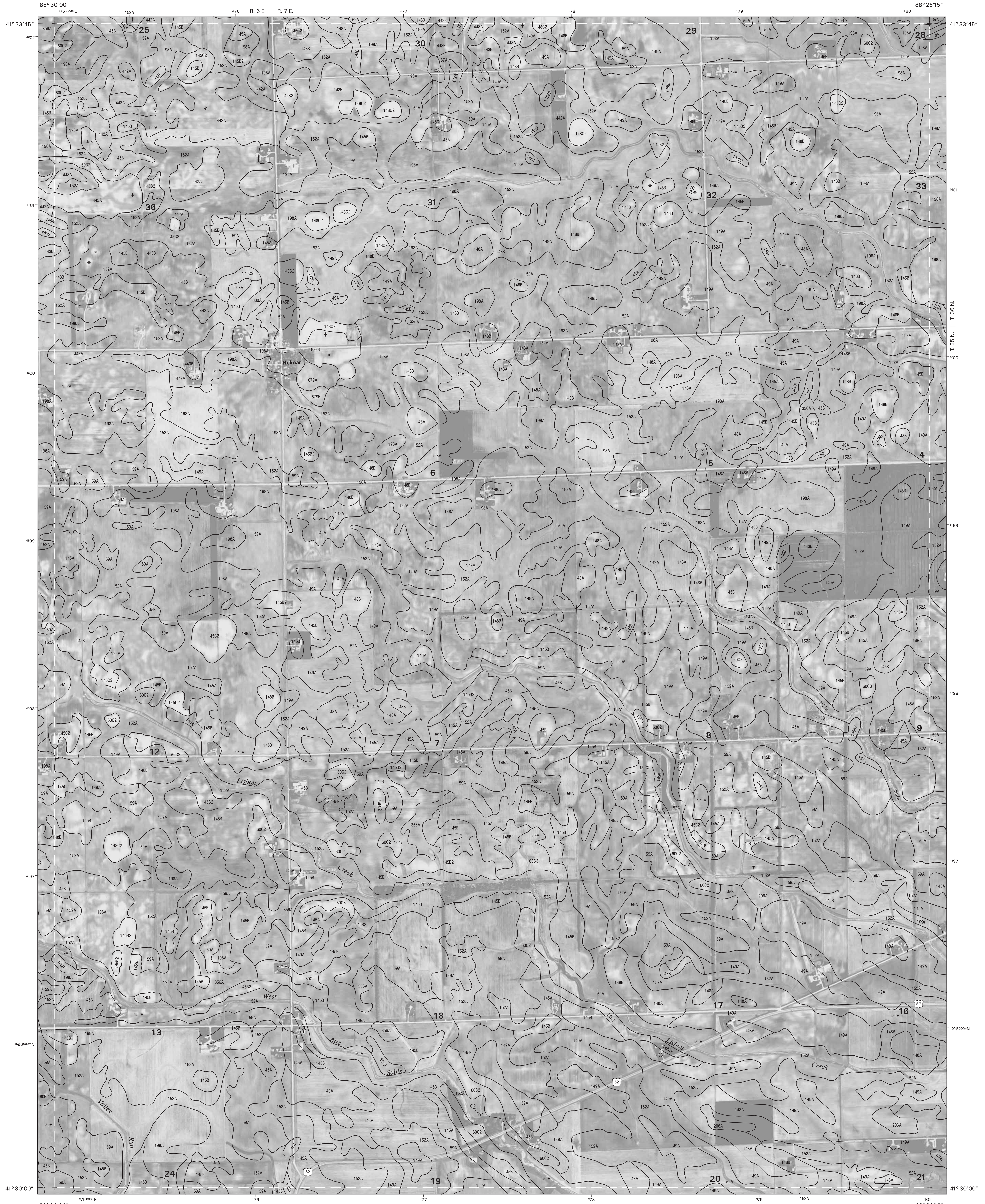
NEWARK SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 20 OF 30

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
PLATTVILLE SW QUADRANGLE
SHEET NUMBER 21 OF 30



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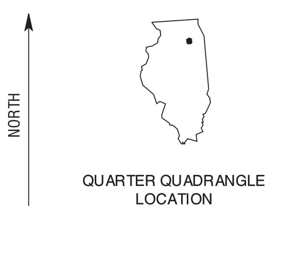
North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

14	15	16
20		22
26	27	28

14 NEWARK NE
15 PLATTVILLE NW
16 PLATTVILLE NE
20 NEWARK SE
22 PLATTVILLE SE
26 STAVANGER NE
27 LISBON NW
28 LISBON NE

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PLATTVILLE SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 21 OF 30

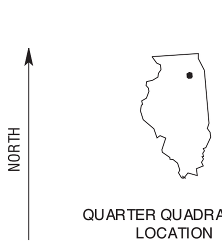
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
PLATTVILLE SE QUADRANGLE
SHEET NUMBER 22 OF 30

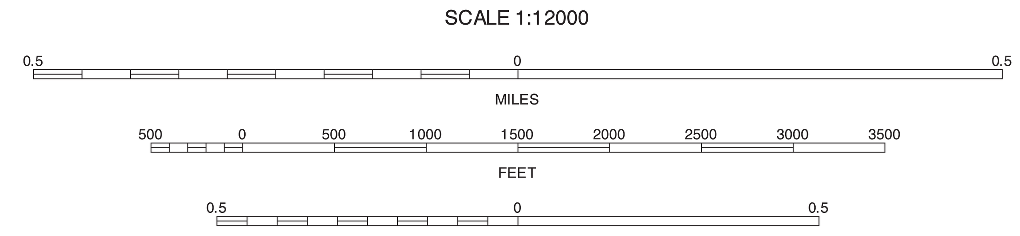
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.
Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 1999 aerial photography.

North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000



15	16	17	15 PLATTVILLE NW
21		23	16 PLATTVILLE NE
27	28	29	17 YORKVILLE SE NW
			21 PLATTVILLE SW
			23 YORKVILLE SE SW
			27 LISBON NW
			28 LISBON NE
			29 MINOOKA NW

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PLATTVILLE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 22 OF 30

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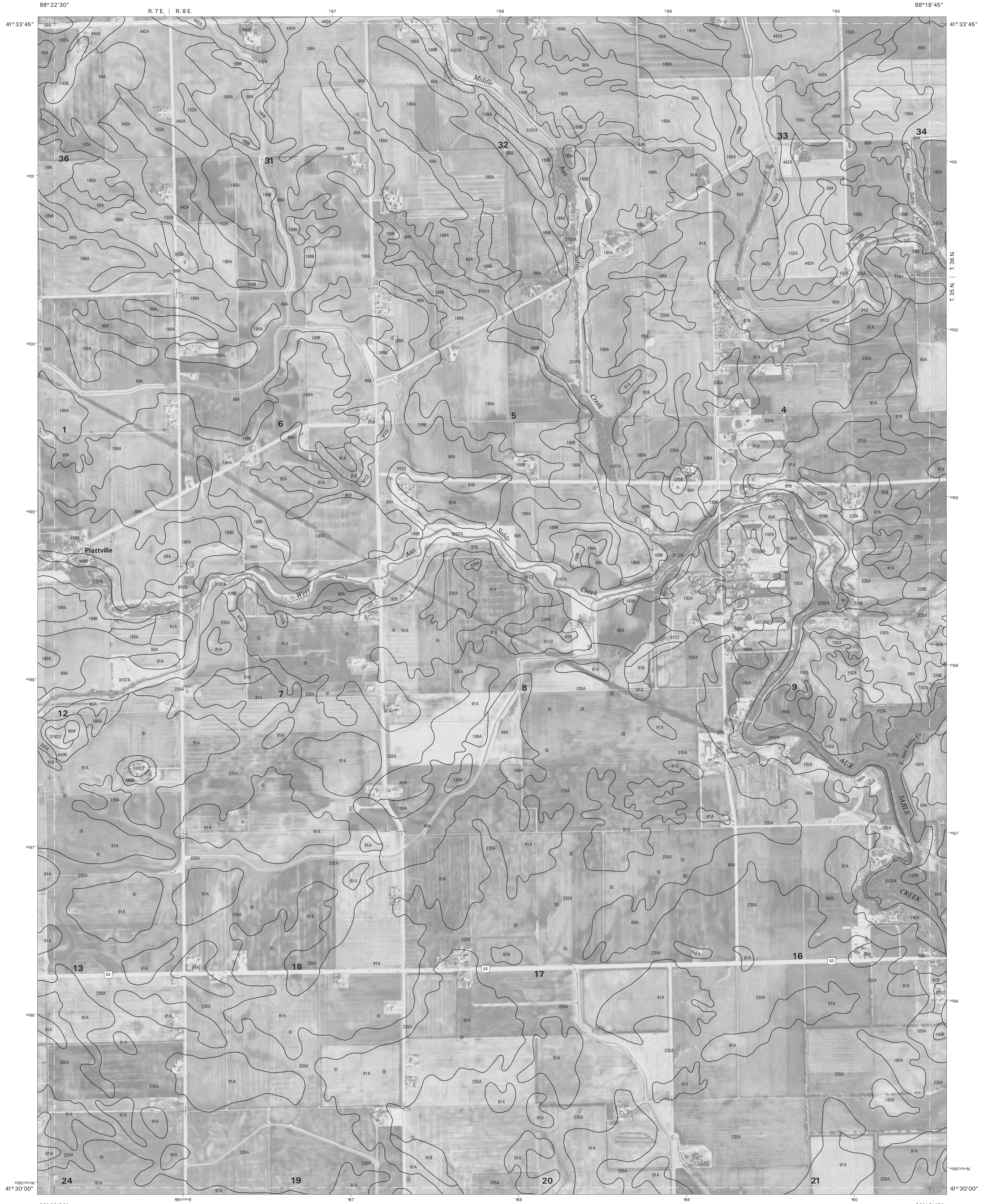
UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

KENDALL COUNTY, ILLINOIS
YORKVILLE SE SW QUADRANGLE
SHEET NUMBER 23 OF 30



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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

16	17	18
22		24
28	29	30

16 PLATTVILLE NE
17 YORKVILLE SE NW
18 YORKVILLE SE NE
22 PLATTVILLE SE
24 YORKVILLE SE SE
28 LISBON NE
29 MINOOKA NW
30 MINOOKA NE

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YORKVILLE SE SW, ILLINOIS

3.75 MINUTE SERIES
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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

0.5 0 0.5
MILES

500 0 500 1000 1500 2000 2500 3000 3500
FEET

0.5 0 0.5
KILOMETERS

17	18	
23		
29	30	

17 YORKVILLE SE NW
18 YORKVILLE SE NE
23 YORKVILLE SE SW
29 MINOOKA NW
30 MINOOKA NE

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YORKVILLE SE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 24 OF 30

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UNITED STATES
DEPARTMENT OF AGRICULTURE
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KENDALL COUNTY, ILLINOIS
STAVANGER NW QUADRANGLE
SHEET NUMBER 25 OF 30

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

INDEX TO ADJOINING 3.75 MAPS

19 NEWARK SW
20 NEWARK SE
26 STAVANGER NE

STAVANGER NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 25 OF 30

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UNITED STATES
DEPARTMENT OF AGRICULTURE
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KENDALL COUNTY, ILLINOIS
STAVANGER NE QUADRANGLE
SHEET NUMBER 26 OF 30

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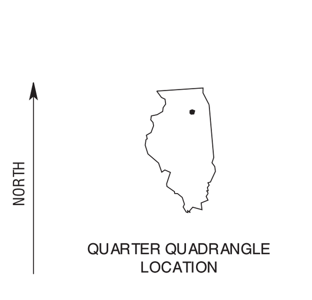
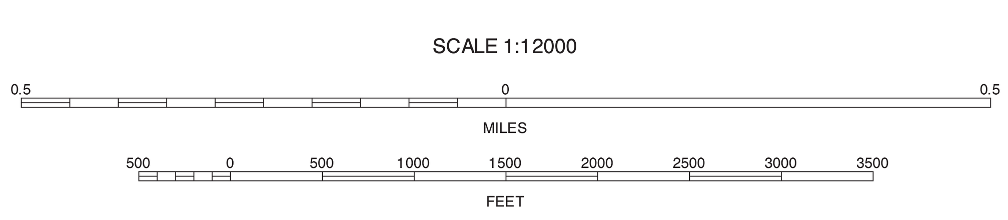


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



19	20	21
25		27

19 NEWARK SW
20 NEWARK SE
21 PLATTVILLE SW
25 STAVANGER NW
27 LISBON NW

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STAVANGER NE, ILLINOIS
3.75 MINUTE SERIES
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UNITED STATES
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KENDALL COUNTY, ILLINOIS
LISBON NW QUADRANGLE
SHEET NUMBER 27 OF 30

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North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES: 0.5 0 0.5

FEET: 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS: 0.5 0 0.5

20	21	22
26		28

20 NEWARK SE
21 PLATTVILLE SW
22 PLATTVILLE SE
26 STAVANGER NE
28 LISBON NE

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LISBON NW, ILLINOIS
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NORTH

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES 0.5 0 0.5

FEET 500 0 500 1000 1500 2000 2500 3000 3500

KILOMETERS 0.5 0 0.5

21	22	23
27		29

21 PLATTVILLE SW
22 PLATTVILLE SE
23 YORKVILLE SE SW
27 LISBON NW
29 MINOOKA NW

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LISBON NE, ILLINOIS
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UNITED STATES
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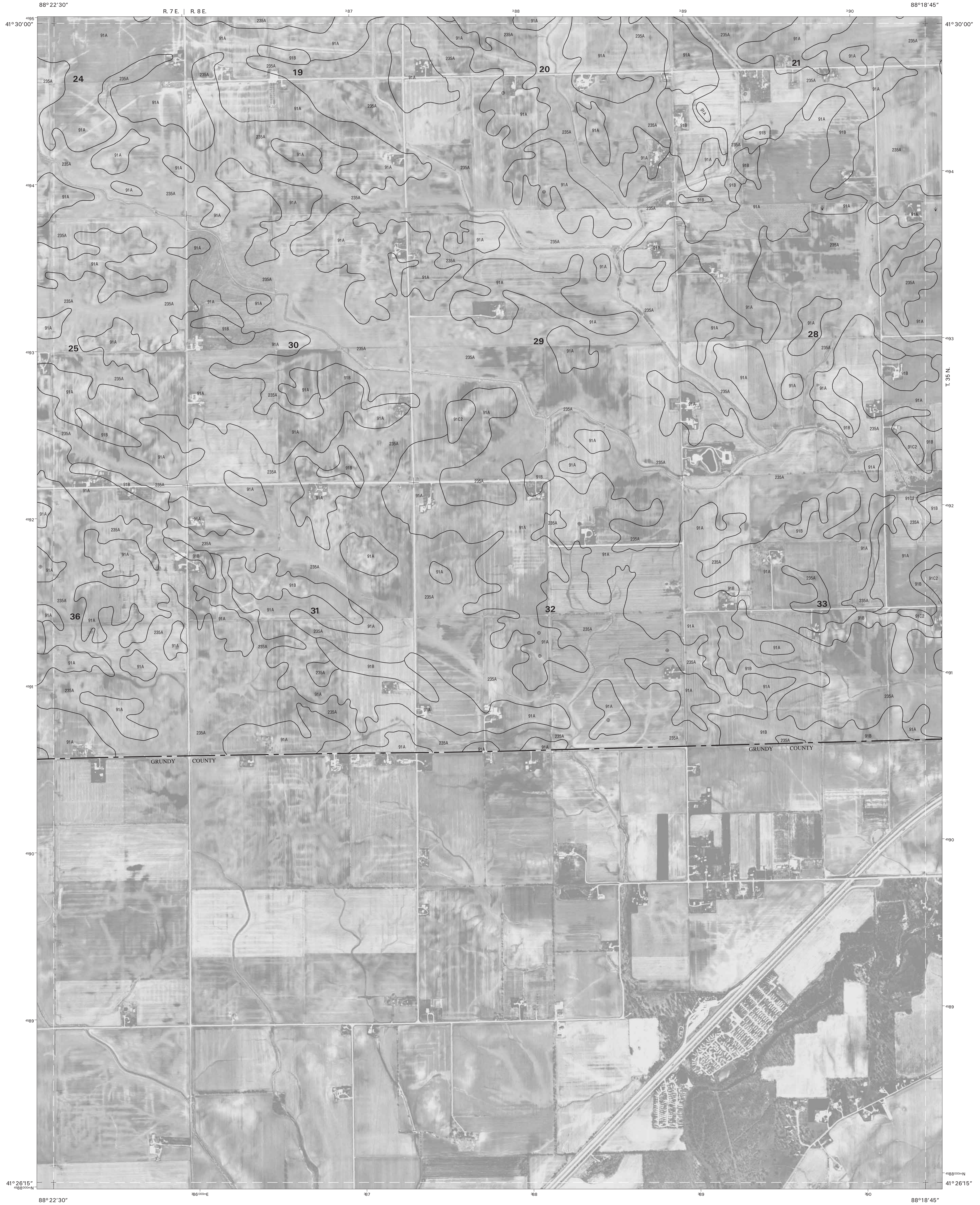
KENDALL COUNTY, ILLINOIS
MINOOKA NW QUADRANGLE
SHEET NUMBER 29 OF 30



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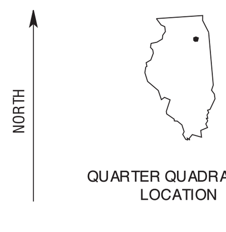
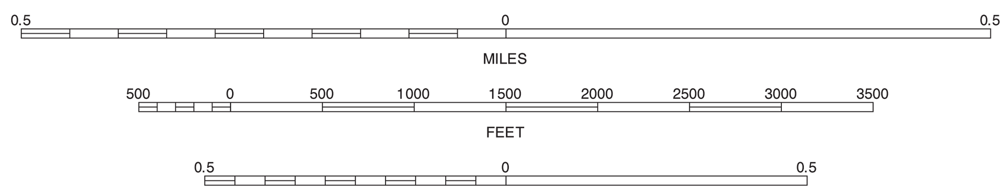


QUARTER QUADRANGLE LOCATION

SCALE 1:12000



22	23	24
28		30

22 PLATTVILLE SE
23 YORKVILLE SE SW
24 YORKVILLE SE SE
28 LISBON NE
30 MINOOKA NE

INDEX TO ADJOINING 3.75 MAPS

MINOOKA NW, ILLINOIS
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SHEET NUMBER 29 OF 30

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UNITED STATES
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KENDALL COUNTY, ILLINOIS
MINOOKA NE QUADRANGLE
SHEET NUMBER 30 OF 30

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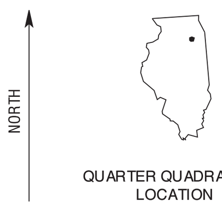

QUARTER QUADRANGLE LOCATION

SCALE 1:12000

MILES

FEET

KILOMETERS

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23 YORKVILLE SE SW
24 YORKVILLE SE SE
29 MINOOKA NW

MINOOKA NE, ILLINOIS

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